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ABSTRACT

Volume IV of this five volume study of the INSPEC SDI system consists of the following appendices to the study: A proposal to investigate the selective dissemination of information; Covering letter to questionnaire; Questionnaire: survey of information use; Chasing letter; Letter of invitation to participate; Chasing letter; Statement of information requirements; Letter to heads of university departments; Electronics research workers in universities and technical colleges; Details of sampling; The role of the Project Associate; Size of sample: memorandum; Reasons for withdrawal; periodical scanned for the service; Sundry memoranda; SDI Service questionnaire; and Profile analysis and modification. (Volumes I through III are: LI004067 through 004069 and Volume V is: LI004071.) (Author/NH)

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INSPEC SDI INVESTIGATION

1967 - 1969

Volume IV

P Clague

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A PROPOSAL TO INVESTIGATE THE SELECTIVE DISSEMINATION OF INFORMATION

(S.D.I. Investigation, Phases 3-6)

December 1966

Prepared by the

INSTITUTION OF ELECTRICAL ENGINEERS

Savoy Place, London, W.C.2.

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Introduction

1. The present proposal is a development of the original proposal (1) which was submitted to the Department of Scientific and Industrial Research by the National Electronics Research Council on 1st October 1964.

2. The original proposal was for a 3-year project. It was proposed that during the first six months of the project the detailed design of the system would be specified and tenders obtained for the provision of computer facilities. In the same period a study would be made of a suitable indexing language and the compilation and matching of profiles investigated.

3. A grant was provided by the Office for Scientific and Technical Information of the Department of Education and Science to support this preliminary design-study phase on the understanding that the proposal for the remaining $2\frac{1}{2}$ year period (Phases 3-6) would be submitted at the end of the grant period. A proposal (3) was submitted by N.E.R.C. on 25th February 1966 and was accepted in principle by O.S.T.I.

4. Subsequently the SDI Project was transferred to the administration of the Institution of Electrical Engineers. The present proposal is essentially the original proposal, modified in the light of further experience, discussions with statisticians, and the transfer to the Institution, and accordingly supersedes the proposal submitted in February 1966.

Aims of the Proposed Investigation

5. The main aims of the investigation are:-

(a) to investigate the value, economics, efficiency and acceptability to users of the S.D.I. system.

(b) to establish whether participation in an S.D.I. system will produce a measurable change in information-gathering habits and in the general approach to information.

Organisation

6. It is proposed that the investigation should be administered by the Institution of Electrical Engineers, with Mr. T.M. Aitchison as Director and Mr. P. Clague as Assistant Director. It is recommended that Mr. C.W. Cleverdon continue as Consultant, to advise on all aspects of the investigation.

Outline of Investigation

7. An S.D.I. system will be established to serve some 600 research workers in electronics, by providing them each week with notifications of English-language periodical articles.

8. Before the S.D.I. system is set up, the information-gathering habits of the participants will be studied: the study will be repeated after they have been receiving the S.D.I. service for some time. Other investigations will be made of the value of the information they receive, how well their interest requirements are met, and how acceptable they find the service in general.

9. In addition to the S.D.I. service, a 'bulletin' comprising a listing of new items in the system will be provided to assess the performance of the system.

Information Material

10. The material included in the S.D.I. system will consist of English-language periodical articles which have significance to the research worker in electronics. The restriction to English-language material (including cover-to-cover translations of foreign-language periodicals) will avoid the necessity for translators on the project staff. It may be possible to introduce foreign-language material at a later stage in the investigation and, at the same time, assess the value of this additional material.

11. It is believed that the total number of significant items of information on electronics research will not exceed 12,000 annually during the project. It is proposed to limit to 240 the number of items dealt with in any week.

12. The periodical material will be obtained from the Science Abstracts organisation.

Indexing Language

13. Although the proposal is for an investigation of S.D.I., it is unlikely that an S.D.I. service would be established without a complementary retrospective-searching facility. The indexing language has therefore been chosen to be suitable for both S.D.I. and retrospective searching. It will be appreciated that the indexing language could be greatly simplified if S.D.I. only were to be catered for since only those descriptors representing the interests of the users would need to be used to index the documents in the system.

14. To ensure maximum compatibility with other JEE activities it is proposed to base the working thesaurus for the project on the thesaurus which is being developed in connection with the index revision of Electrical and Electronics Abstracts.

Indexing Organisation

15. The items for indexing will be selected by the Assistant Director or Chief Indexer. All material selected will be photocopied before indexing.

16. The indexing will be carried out by the two indexers supplemented by the Chief Indexer, who, however, will be mainly concerned with checking the indexing and controlling the development of the indexing language.

Selection of User and Control Groups

17. Of the 600 users who are to participate in the S.D.I. investigation it is intended that 540 should be individual research workers and 60 should be small organisations, departments, or sections, which will be treated as single units.

18. In obtaining the 600 users for the sample it is proposed to obtain roughly equal numbers from three sectors, as follows:-

180 from Government and similar organisations and nationalised industries.

180 from universities and colleges of technology.

180 from industry and the research organisations.

19. Since each of the three groups poses different problems in obtaining a representative sample, different methods of doing so, appropriate to each case, have been worked out with the advice of statisticians.

User-Profiles

20. It was originally proposed to investigate the following methods of obtaining details of subject interests from users for the compilation of user-profiles:-

(a) invite the user to describe his interests in his own words

(b) supply a list from which the user could choose terms to describe his interests

(c) carry out (a) and (b) by correspondence

(d) carry out (a) and (b) by interview.

21. Since some 2-4,000 descriptors are expected to be used in the system, it would be impracticable to provide a list of these and ask each user to select those describing his interests. Method (b) has therefore been omitted from this proposal.

22. Similarly, in the design-study phase, staff and time did not allow subject interests to be sought by interview. The details of interests were obtained by correspondence, mainly with the assistance of the librarian or information officer of the organisation. In general this method worked well and, since it is much less expensive than the interview method (conducted by the project staff), no comparison between the two methods is proposed. Instead the user-profiles will be obtained by correspondence (either direct with the user or, if possible, through the local librarian): interviews will be used only when it has proved difficult to obtain an agreed user-profile by correspondence.

23. The procedure used in the design-study phase will be followed. The user's statement of interests (in his own words) will be translated into descriptors used in the system and associated terms and

additional concepts suggested. On the same document 'essential terms' will be listed where these seem applicable and a statement composed showing the relationship of the user's terms. The essential terms and the statement allow the project staff to discover if their interpretation of the user's requirements is correct.

24. The profile document will then be returned to the user for agreement or amendment and comment. When it has been agreed by the user it will be redrafted into the standard form and a logical statement made showing how the descriptors are to be combined.

25. The users will have complete freedom in specifying their requirements. They will be asked to state the concepts on which they wish to receive information, rather than to describe their total interests.

26. In the design-study phase, users were asked to list a few documents that were of interest to them. This was found to be extremely useful in showing how each user interpreted the terms he used to describe his interests and it is proposed to continue this practice.

27. To ensure that the user-profiles which are finally compiled require as little modification as possible during the experimental period (Phase 4) it is proposed to carry out initial matching of the profiles with a representative collection of documents and to have the relevance assessed by the procedure adopted in the design-study phase.

Matching

28. The conditions for an acceptable match between user-profile and document descriptors will be specified individually in accordance with the requirements and interests of each user. These conditions will be adjusted initially in the light of the initial matching it is proposed to carry out during Phase 3 and subsequently on the results of the users' assessments of the service they receive during the experimental period (Phase 4).

29. Users will be asked to state whether, in general, they would prefer (a) to be notified of as much as possible of the information of interest to them, however many irrelevant notifications may be sent to them as well, or (b) to be sent only relevant notifications, however many relevant documents may be missed as a result. In other words they will be offered the choice between high recall and high precision.

30. It is expected that the majority will choose high recall but that many will subsequently modify this choice when they find how many notifications they receive. However it must be emphasised that the satisfactory balance between recall and precision must be found uniquely for each user since it depends on his subject interests (and how they can be expressed), his requirements for information (i.e. whether he wishes to read widely or not), and the number of documents received by the system which are of interest to him.

31. Three main types of match will be provided initially in the system, although others may be developed if found necessary. Those provided will be:-

(a) simple matching on a number of descriptors;

(b) matching of a number of descriptors, where one or more are specified as essential, i.e. unless the essential descriptors match there is no acceptable match;

(c) by a logical statement in which certain descriptors taken singly may provide an acceptable match but other descriptors will only be acceptable in certain combinations. Such logical statements will be contained in the user-profile; the descriptors used in the indexing of documents will be simply listed as individual descriptors, each standing on its own.

Notifications

32. In the normal S.D.I. service provided during the investigation, users will receive notifications of documents considered to be of interest to them, but not copies of the documents. Each notification will comprise the title, author(s), and citation of the document and a list of the descriptors used to index it.

33. Where possible the notifications will be issued through the librarians or information officers of the organisation to which the users belong.

34. During the project a test will be made to compare the usefulness of abstracts with the lists of descriptors for the assessment of relevance (see para. 45 below). Another comparison will be made of the acceptability of different notification formats.

Assessment of Relevance

35. A simple marking of the list of documents notified will be requested for the regular feedback required to obtain optimum performance of the system. Against each document number listed, the user will be asked to write '1', '2' or 'X' according to his assessment of relevance as follows:-

1 - a paper he considered essential to have brought to his notice;

2 - a paper of which he was willing to be notified, but the omission of which would have caused him no concern;

X - a paper he did not wish to have brought to his notice.

36. Periodically, further information will be sought, in particular, whether the documents were already known to the user before he received the S.D.I. notification.

37. The final performance figures for the system for each user will be based on his assessment of the relevance of the original articles, copies of which will be provided in connection with the comparison of abstracts and lists of descriptors (see para. 40).

Measurement of Recall

38. The relevance-assessment returns described above will provide a measure of the 'precision' of the system for each individual (i.e. the percentage of relevant notifications to the total number of notifications received by each user). It is of equal importance to establish the corresponding 'recall' figure (i.e. the percentage of relevant notifications received by each user to the total number of notifications relevant to him in the system).

39. Thus to obtain the recall figure of the system for each user-profile the total number of documents in the system which are relevant to the user-profile must be established. For this a bulletin will be used comprising a complete listing, under broad subject headings of all the items received in the system during the previous week.

40. Every 8th week each user will be sent a copy of those sections of the bulletin likely to contain material of interest to him, and will be asked to mark those items whose notification he would consider essential (i.e. which he would have marked '1' in the list of documents notified). The result will be compared with the notifications he would have received for that week.

41. In the weeks in which he receives the bulletin sections he will not be sent either the notification list or the corresponding cards, but the cards will be made available to him later if he wishes to maintain his own file.

Changes in User-Profiles

42. It cannot be expected that users' requirements for information will remain unchanged over the period of the project. Some users will move to another organisation; others will change their work within the same organisation; still others will change the emphasis of their interests while still doing the same work. So far as possible, it is intended to retain participants as members of the user group, whether they change their interests, their job or their organisations.

43. While such changes, particularly between organisations, will increase the difficulty of detailed analysis for different types of user and add considerably to the degree and quantity of user-profile modification to be done during the project, it will provide a realistic situation in which to measure the effort required to carry this out.

44. This is an important assessment since it could have a critical effect on the economics of an S.D.I. system. The rate and degree of change of user-profiles will be measured during the operational period (Phase 5).

Comparison of Abstracts and Lists of Descriptors for Assessing Relevance

45. Information so far available tends to show that the value of abstracts for assessing the relevance of documents may be insufficient to justify the cost of preparing them or of including in an S.D.I. system abstracts which are already prepared.

46. It is proposed to investigate the value of titles only, titles with abstracts, and titles with descriptors, for the assessment of relevance. Each form of notification will be sent to every user in one weekly service towards the end of the operational period (Phase 5). When the user has made his assessment based on the notifications he will be sent photocopies of the articles and asked to make a second assessment on that basis. He will also be asked to state his preference among the three forms of notification.

Information-gathering Surveys

47. Since S.D.I. is a new current-awareness dissemination system, it will be of interest and value to discover what changes, if any, it produces in the information-gathering habits of users and in their general approach to information. The implications of the Aslib report (2), in relation to current or proposed techniques of disseminating or locating information, are sufficiently serious to make it desirable to find out whether the present situation is capable of being changed to a more rational pattern.

48. There are a number of different aspects of the users' use of and approach to information which might be changed. If the user develops confidence that the S.D.I. system will provide him with a high proportion of those items which he must be aware of to keep abreast of developments within his field, he may cease to browse or scan regularly the primary or secondary publications in his field, and instead concentrate his efforts on associated fields.

49. Again, his regular use of a current-awareness service may encourage him to carry out retrospective searches or request these from his local librarian and, in general, to make more use of the information service provided by his organisation. This will be more likely if, as is intended, the S.D.I. service is organised by and and channelled through his organisation's librarian or information officer.

50. To investigate any change in information-gathering habits and general approach to scientific and technical information, a survey, using a questionnaire designed with the advice of Aslib Research Department, will be carried out on the user group before the start of the S.D.I. service. The survey will be repeated when they have been receiving the service as a routine for some 12 months.

51. To evaluate the contribution of any other factors to the changes found, a matched control group of research workers who will not receive the S.D.I. service will be surveyed similarly on both occasions.

52. It is realised that there is a considerable possibility of an interaction between members of the two groups, since it would be impossible (and undesirable to try) to prevent a member of the user group from passing information he had received through the S.D.I. service to a colleague in the control group. It is considered that this danger is outweighted by the advantage in having a high degree of matching of the two groups. However it will be possible to assess the importance of this interaction by drawing additional members of the control group from similar organisations which do not provide members of the user group.

53. To supplement this general investigation of information-gathering habits it is proposed to carry out studies in depth of the habits of a small number of users of the service. It is hoped that these will include diary studies.

54. To assess what proportion of the change in habits may be attributed to the regular receipt of a current-awareness service rather than specifically to S.D.I., half of the members of the control group will be provided, during the operational period (phase 5), with copies of either C.P.P. or C.P.E. or both.

55. In addition to these investigations it is hoped that a number of librarians and information officers will moniter the use made of their information services by recipients of the S.D.I. service before and during the period of service.

Value, Usefulness and Acceptability of the S.D.I. Service

56. Since the main object of the proposed project is to investigate the value and acceptability to users of the S.D.I. service, the assessment of these aspects will be carried out with particular care.

57. Much of the assessment must of necessity be subjective, depending on the users' response to the general questions, "is the service of value?" and "is the information you receive and the form in which it arrives acceptable to you?". Many of these data will be obtained by questionnaires.

58. However a number of more objective measurements will be possible. Although the service will be free it will only be provided to a user so long as he continues to return his relevance assessments regularly and to provide the recall data required. Thus the proportion who are deprived of the service for this reason will be some indication of the value placed on it. It is considered that the 18-month period of the experimental and operational service is sufficiently long for the novelty value to have disappeared well before the end.

59. While there is a value in providing users with the knowledge that certain information exists, the system cannot be considered successful unless a considerable proportion of the documents notified are of sufficient value for the user to seek to obtain them. As copies of the documents notified will not be supplied as part of the investigation, the project staff will be unable to measure the number of such documents which are sought by users. However, a number of librarians and information officers have agreed to measure this for the users in their organisations and it is hoped that others will help in this way.

60. Another more objective measure of the value of the S.D.I. service would be given by the number of documents notified by the S.D.I. service which were found to be of particular value by users in their work. To avoid bias for or against the S.D.I. system as far as possible, it is proposed to arrange for another organisation to ask a proportion of the users at intervals to list any documents they had read in the previous three months which were of particular importance in their work. The proportion of these documents, ignoring foreign-language material, which was notified by the S.D.I. service will give some indication of its usefulness.

61. An indication of the most acceptable type of notification, i.e. whether title, author and citation only, or with a list of descriptors, or with an abstract, will be given by the investigation discussed previously.

62. It is less easy and much more expensive to investigate the preferred form of the notifications but it is intended to compare the acceptability of at least two forms:-

(a) a print-out of the user's name and address and the numbers of the relevant documents, the document details being given on duplicated library-type cards sent with the print-out.

(b) a print-out of the user's name and address and the complete details of the documents (i.e. title, authors, citation and list of descriptors).

63. Most of the investigations proposed in the above paragraphs are based on the assumption that an optimum or at least reasonably satisfactory system is developed, brought to full working order during the experimental period (Phase 4) and then continued during the operational period (Phase 5). It is considered important to check as soon as possible that the system is giving reasonable satisfaction and is, within limits, acceptable to the users. The performance of the system (i.e. recall and precision) will be continually measured from the first week of experimental operation so that any necessary modifications can be made as soon as possible. Similarly, frequent surveys of users will be made from the earliest period of operation to ensure that any necessary changes can be made in method, forms of output, or general approach.

64. During the project it is hoped to develop other measures of the value and acceptability of the system as the project staff come to know the members of the user group.

Retrospective Searching Test

65. Towards the end of the operational period (Phase 5) it is proposed to carry out a test of the efficiency of the system for retrospective searching. The test will be designed by the Consultant on the basis of the experience gained in previous Aslib Cranfield research projects.

Co-operation of Librarians and Information Officers

66. The co-operation of the librarians and information officers of the users' organisations is essential for the carrying out of the proposed investigation.

67. The co-operation is envisaged as taking the following forms:-

(a) The local librarian would act as the project's local liaison officer in selecting colleagues for the user and control groups, in arranging for the users to provide details of their subject interests, and assisting in the compilation of their user-profiles.

(b) He would be the channel through which the S.D.I. notifications would be sent, i.e. the notifications would be sent to him in bulk for distribution to his users. In this role he would be able to keep himself informed of satisfaction or dissatisfaction with the service, since users are more likely to express their opinions freely to a colleague than by making them in writing to unknown persons in London.

(c) He might carry out various investigations in connection with the project, such as the count of documents requested by users from S.D.I. notifications.

Computer Facilities

68. It is proposed to use for system design, program-writing and provision of a weekly service, the computer bureau selected on the basis of the tenders submitted to meet the N.E.R.C. specifications.

Staff

69. The following staff (one of each class) will be required for the investigation:

Director: throughout the project

Assistant Director: throughout the project; sharing direction of project with Director and responsible for day-to-day operation.

Consultant: part-time; throughout the project.

Analyst: for 2 years. (Phases 3-5): assembly of user and control groups; surveys of information-gathering habits; compilation of profiles; analysis of relevance and recall assessments; modifications of profiles; analysis of failures; user value and acceptability surveys; retrospective searching test; analysis of results; assisting in indexing.

Chief Indexer: for 2 years (Phases 3-5); responsible with Assistant Director for selection of documents; supervises indexing; development of indexing language; compilation and modification of profiles; retrospective searching test.

Indexer: for 2 years (Phases 3-5): indexing; profile compilation.

Analyst-Indexer: for 2 years (Phases 3-5).

Tape-typewriter Input Operator: for 2 years (Phases 3-5).

Typist: throughout the project.

Clerk/Typist: for 2 years (Phases 3-5).

Clerical Assistant: for 2 years (Phases 3-5).

Photocopier Operator: for 2 years (Phases 3-5).

Proposed Programme of Work

70. The division of the project into phases as in the original proposal is maintained.

71. It is planned that the project will be completed in $2\frac{1}{2}$ years, and be in four phases as follows:-

(Phases 1 and 2 are covered by the design-study period, 1st October 1965 - 28th February 1966)

Phase 3 (6 months) Programme writing and testing of system; development of indexing language: indexing of documents: assembly of user groups and control groups: compilation of user-profiles: manual matching of user profiles and subsequent modifications: first survey of information-gathering habits.

Phase 4 (6 months) Experimental working of S.D.I. system: issue of bulletin: regular analysis of recall and precision: initial survey of value and acceptability: modifications to user-profiles and system.

Phase 5 (12 months) Operational working of S.D.I. system: analysis of recall and precision: measurement of frequency of change of user-profiles: comparison of titles only, and with descriptor lists and with abstracts for notifications: survey of documents found of special value: comparison of forms of notification: surveys of assessments of value and acceptability of system: test of retrospective-searching performance of system: second survey of information-gathering habits.

Phase 6 (3-6 months) Completion of surveys and tests: analysis of results: compilation of report.

72. The programme is charted in the Appendix.

Finance

73. Estimated costs for the whole 2½ year project and for each of the four phases are given in the attached document.

Additional Users of the System

74. It is proposed that users of the S.D.I. service, additional to those taking part in the investigation, should be accepted from the beginning of Phase 5 on payment of at least the marginal cost of serving them.

Computer Training

75. It is recommended that suitable members of the staff should attend a course arranged by the computer service bureau to gain some knowledge of the computer facility which will be used in the project.

Travel

76. It will be necessary for senior members of the project staff to visit most of the major centres for discussions with the users or with co-operating librarians.

77. It is thought desirable to encourage the co-operation of the librarians and information officers by holding three meetings in the course of the investigation to which they would be invited to discuss the plans and work of the project. It is proposed that their travelling and subsistence expenses should be paid where necessary.

Association with American Work

78. The Institute of Electrical and Electronics Engineers (New York) have expressed the wish to be associated with the information work being carried out by the I.E.E. What this will involve has not yet been worked out, but it should provide a means of ensuring the close Anglo-American co-operation in the fields of

electrical, electronics and control engineering, similar to that which has been established in the physics field through the association between the I.E.E. and the American Institute of Physics.

References

(1) A Proposal to Investigate the Selective Dissemination of Information. London, National Electronics Research Council, September 1964.

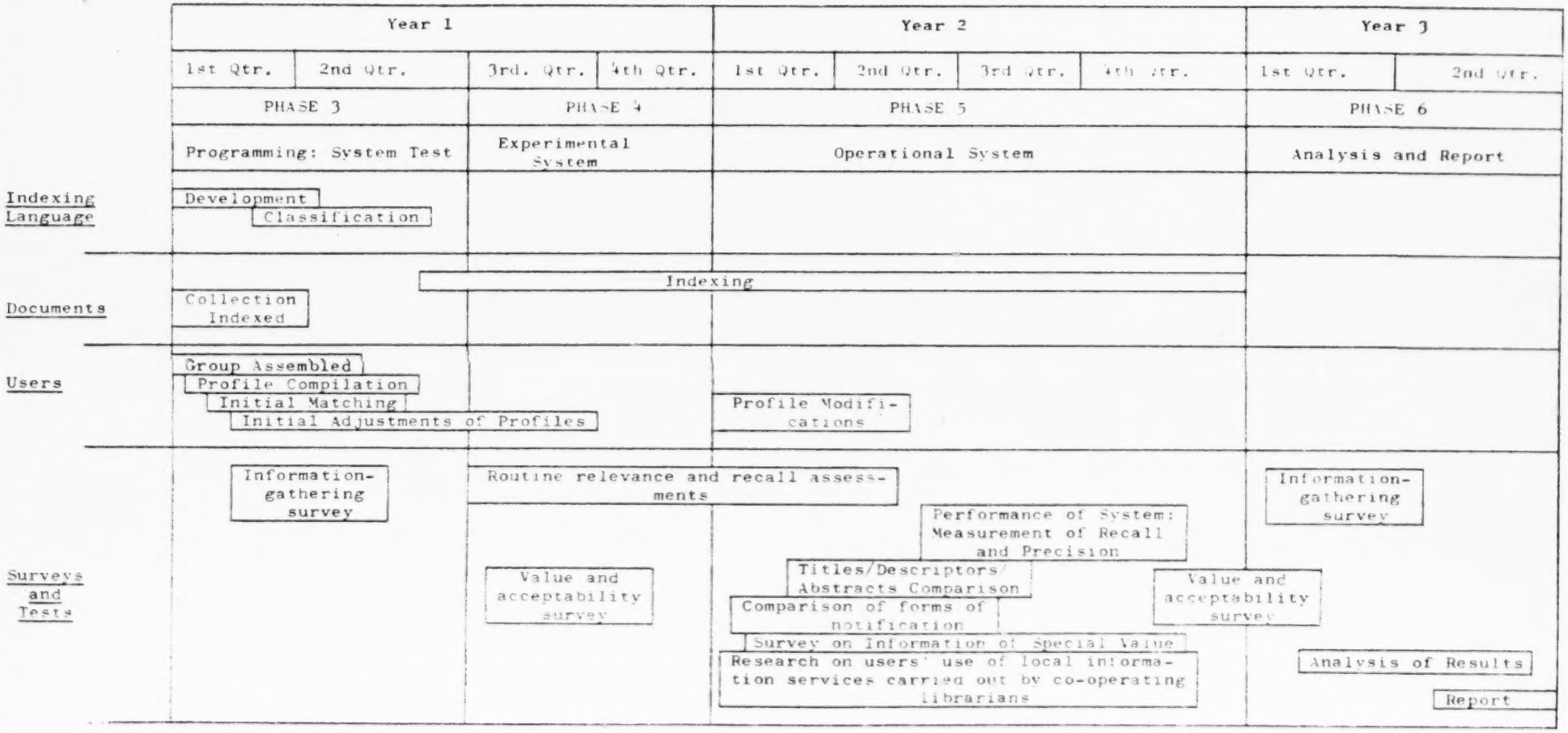
(2) Report of an Investigation on Literature Searching by Research Scientists. John Martyn. Aslib Research Department 1964.

(3) A Proposal to Investigate the Selective Dissemination of Information (S.D.I. Project, Phases 3 - 6). London, National Electronics Research Council, February 1966.

(4) Selective Dissemination of Information Project: report of work carried out during the period 1st October 1965 - 28th February 1966 (S.D.I. Project, Phases 1 and 2), by T.M. Aitchison and P. Clague. N.E.R.C. Report SDI/1. London, National Electronics Research Council, March 1966.

62/05
S/FL
6.1.67

Programme of Work



Cost Estimates (Phases 3-6, 2½ years)

Phase	3	4	5	6	Total
Months	6	6	12	6	30
	£	£	£	£	£
1. Staff salaries	8250	8250	17500	4000	38000
2. Travel					
(a) By co-operating librarians		350	650		1000
(b) By staff (overseas) *	800	800			1600
3. Equipment and non-recurrent costs					
(a) Advertisements for staff and agency charges	300				300
(b) Tape-typewriter	2500				2500
(c) Computer programs	4000	500	1000	500	6000
(d) Purchase of magnetic tape				500	500
4. Recurrent costs					
(a) Contribution towards overheads being 50% of staff salaries	4125	4125	8750	2000	19000
5. Other costs					
(a) For S.D.I. service and analysis					
Stationery	100	350	1150	50	1650
Photocopying	1360	240	2700		4300
Postage	250	300	1800		2350
C.P.E. and C.P.P. †			1350		1350
(b) Computer operation	500	2000	9000	1000	12500
	22185	16915	43900	8050	91050

* Provides for the possibility of visits to the U.S., if U.S. participation agreed.

† Provides for C.P.E. and C.P.P. to 300 participants, if required.

The Institution of Electrical Engineers Savoy Place London WC2

Telephone: 01-240 1871 Telex: 261176 Telegrams: Voltampere London Telex Cables: Voltampere London WC2

Dear

We should be grateful for your help in a government-sponsored investigation into ways of developing national and international information services for scientists and technologists in the fields of physics, electrotechnology and control.

The aim of the attached questionnaire, which we hope you will be kind enough to complete, is to discover your attitude as a research worker to scientific and technical information, and the use you make of the information services available at present.

We have tried to ensure that the questions are straightforward and may be answered quickly. If, however, you would like to add further comments, we shall, of course, be delighted to have them.

Thank you for your help,

Yours sincerely,

T. M. Aitchison,
Manager, Information Research.

Enc.

Secretary G. F. Gainsborough Ph.D. C.Eng. F.I.E.E.

The Institution of Electrical Engineers **Savoy Place** **London WC2**

Telephone: 01-240 1871 Telex: 261176 Telegrams: Voltampere London Telex Cables: Voltampere London WC2

SURVEY OF INFORMATION USE BY RESEARCH WORKERS

Your co-operation in answering the questions below will be appreciated. A reply-paid envelope is enclosed.

1. Age: Under 25 ( ) 25-30 ( ) 31-40 ( ) 41-50 ( ) Over 50 ( )

2. Qualifications (and main subjects .....

.....

3. Position (Your title in the organisation or the position you hold, e.g. Lecturer, Senior Scientist, Group Leader, etc.,):

.....

4. Research role: Please indicate whether you are

( ) In charge of research workers

( ) Member of research team

( ) Individual research worker (with or without assistance)

( ) Other (please state) .....

5. Subject of research (e.g. Semiconductor devices, gas lasers):

.....

.....

Secretary: G. F. Gainsborough Ph.D. C.Eng. F.I.E.E.

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6. Type of research on which you spend most of your time:

( ) Pure (concerned mainly with adding to scientific knowledge)

( ) Exploratory (intended to produce knowledge of practical value)

( ) Applied (seeking a solution to a specific problem)

( ) Other (please explain) .....

7. How important do you consider it to keep abreast of new work published in your field?

Essential ( ) Valuable ( ) Of minor importance ( )

8. Are you reasonably satisfied that you are well informed on new work in your field published in English?

Yes ( ) No ( )

9. Please indicate the degree of difficulty each of the following causes you in keeping yourself aware of current English-language information (1 = negligible difficulty: 5 = great difficulty)

Finding out which specific, newly-published items (periodical articles etc.) are relevant to your interests.	1 2 3 4 5
Obtaining material (either to scan for relevant items or to read and assimilate.)	1 2 3 4 5
Finding time to read and assimilate the material when obtained	1 2 3 4 5

10 When faced with a new problem or in the course of a new project, do you attempt to discover what information has been published on the subject?

Yes ( ) No ( )

If No, is this because

( ) Although you consider it necessary, it would be too difficult or time-consuming, or the facilities available are inadequate, etc.?

( ) You consider it not necessary?

( ) Other reasons (please state) .....

.....

11. Do you consider that articles of value to you appear in periodicals other than those which you see regularly?

Yes ( ) No ( )

If YES, do you consider the number of such articles

Large ( ) Moderate ( ) Small ( )

12. If of the following do you use most?

( ) The main library of your organisation

( ) A departmental or section library

( ) A library external to your organisation (Please give its name)

.....

13. How often, on average, do you use the above library (either by telephone, correspondence, visits, or by receiving requested materials from it, other than periodicals on routine circulation)?

..... times per month

14. Where, in relation to your office, is this library?

( ) Same building - same floor

( ) Same building - different floor

( ) Different building within convenient walking distance

( ) Different building not within convenient walking distance.

15. How many technical periodicals (other than abstracts journals and lists of titles) do you see or scan regularly?

.....

Please give the titles of the six which are most important to you (abbreviated titles will do).

1. ..... 4. .....

2. ..... 5. .....

3. ..... 6. .....

16. Please tick any of the following which you regularly use to keep yourself aware of current published information (i.e. scanning most issues).

a ( ) Abstracts bulletin or titles list issued by the library or information service of your own organisation

b ( ) British Technology Index

c ( ) Chemical Abstracts

d ( ) Chemical Titles

16. Cont'd.

e. ( ) Computer Abstracts

f. ( ) Control Abstracts

g. ( ) Current Contents: space, electronics and physical sciences

h. ( ) Current Papers in Electrotechnology

i. ( ) Current Papers in Physics

j. ( ) Current Papers on Control

k. ( ) Electrical and Electronics Abstracts (Science Abstracts - B)

l. ( ) Electronics and Communications Abstracts

m. ( ) Engineering Index (Electrical and Electronics Engineering Section)

n. ( ) Index Aeronauticus

o. ( ) Instrument Abstracts

p. ( ) N.A.S.A. Scientific and Technical Aerospace Reports

q. ( ) Nuclear Science Abstracts

r. ( ) Physics Abstracts (Science Abstracts - A)

s. ( ) Solid State Abstracts

t. ( ) U.S. Government Research and Development Reports

u. ( ) Other (please state) .....

.....

17. How much time (at work, on journeys or at home) do you consider you spend scanning or reading published technical information (periodicals, abstracts, reports from other organisations etc)?

.....hours per week

How much of this is spent actually reading and assimilating as distinct from scanning?

..... hours per week

18. If you are a research student, when do you expect to complete your thesis?

.....

19. Comments (Any comments you care to make on the questions or on your answers will be welcomed).

The Institution of Electrical Engineers Savoy Place London WC2

Telephone: Covent Garden 1871 Telex: 261176 Telegrams: Voltampere London Telex Cables: Voltampere London WC2

Dear

We recently sought your help in a survey of the use made of information sources by research workers in the fields of physics, electrotechnology and control.

We hope you will not mind us jogging your memory in this way since your reply is important to the rest of the investigation on which we are engaged.

In case the previous questionnaire has gone astray we enclose a second copy which we hope you can find time to complete and return.

Yours sincerely,

T.M. Aitchison

Enc.

Secretary: G. F. Gainsborough Ph.D. C.Eng. F.I.E.E.

The Institution of Electrical Engineers Savoy Place London WC2

Telephone: 01-240 1871 Telex: 261176 Telegrams: Voltampere London Telex Cables: Voltampere London WC2

SDI Investigation

Dear

We should very much like to have your assistance in a government-funded investigation of a new information technique. This technique offers a possible solution to the problem of keeping abreast of recently published work. What your participation would involve is described in the attached note.

If you would like to be included in the group of research workers who will receive and evaluate the service, please let us have details of your subject interests on the attached form. As we are working to a tight schedule, we would like to have the details as soon as possible. No covering letter is required.

We hope that you will be willing to assist us in this investigation. As your time is valuable, we shall ensure that participation involves the minimum of time and effort on your part.

Yours sincerely,

P. Clague,
Manager, SDI Investigation

S.5

Secretary: G. F. Gainsborough Ph.D. C.Eng. F.I.E.E.

The Institution of Electrical Engineers Savoy Place London WC2

Telephone: 01-240 1871 Telex: 261176 Telegrams: Voltampere London Telex Cables: Voltampere London WC2

Dear

SDI Investigation

Some time ago we offered you the opportunity to be included in a group of six hundred electronics research workers who, as part of a government sponsored investigation, will receive a computer-based information service free of charge in return for agreeing to assist in its evaluation. In case the previous letter has gone astray I enclose a copy of the letter and the enclosures.

We hope that you will accept the invitation but we should like to know soon whether you wish to take part of whether we should replace you in our sample. Perhaps you would let us know by ticking the appropriate box at the foot of this letter and returning it in the envelope provided.

We hope we shall have your co-operation in our investigation.

Yours sincerely,

P. Clague,
Manager, SDI Investigation

I wish to take part: my Statement of Information Requirements
is enclosed herewith ☐
will be sent within ten days ☐

I do not wish to take part in the SDI Investigation ☐

S.15

Secretary: G. F. Gainsborough Ph.D. C.Eng. F.I.E.E.

The Institution of Electrical Engineers Savoy Place London WC2

SDI Investigation

Profile No.

Statement of Information Requirements

The main aim is to establish the subjects or topics on which you would like to be kept informed. These should be continuing interests and the more details you give, the closer we shall be able to get to a correct understanding of your particular interests. In this connection the references to relevant articles will be very useful.

This statement of your requirements will be used to construct a draft subject-profile which will then be sent to you and modified in the light of the comments you make. When the profile has been agreed a number of trial runs will be made before it is finally adopted as the basis of your SDI service.

Information Requirements

As a guide we attach two examples of the type of statement which has been found more satisfactory than a simple list of terms. However these are intended only as a guide and you are not limited to this kind of statement.

Please state your information requirements here:-

Please see over

Additional Information

It would be helpful if you would assume that we are non-expert in your subject and explain what you understand by any of the specialised terms you have used above, or give any alternative terminology used for the subjects mentioned.

Relevant articles

It would be of great assistance if you would cite up to six articles which you consider relevant to the subjects you have mentioned.

Date _____ Signed _____

Example of statement of information requirements (1)

I should like to be kept informed of all articles on compound semiconductors of the II-VI Group, particularly zinc sulphide, zinc selenide, cadmium sulphide and cadmium selenide. I am also interested in the optical and electrical properties which given information on defect levels in other semi-insulators - examples of such properties are absorption and emission spectra, thermoluminescence, electrical conductivity as a function of temperature, space charge limited currents, Hall effect and electron spin resonance. I should also be interested in theoretical work on photoconductivity, electroluminescence, acoustoelectric interaction and special effects such as the Gunn and Hall effects. Carrier transport, Schottky emission and tunnelling in semiconductors are also relevant.

Additional information

The II-VI semiconductors also include zinc telluride, cadmium telluride, mercury telluride, mercury selenide and mercury sulphide - these are of some interest to me but less than ZnS, ZnSe, CdS and CdSe.

Semi-insulators are those compounds which have energy gaps (forbidden bands) between about 1.5 and 5.0 eV.

The Gunn effect is the production of high frequency oscillations in bulk semiconductors under the action of an electric field.

Example of statement of information requirements (2)

I am interested in all applications of lasers, both present and possible, including range-finding, detection of clear-air turbulence, optical spectroscopy, Raman spectroscopy, optical information processing, spatial filtering, holography, micromachining, welding, surgery, etc. I also am concerned with laser mode selection techniques and with switching and pumping techniques. I am particularly interested in high-repetition-rate and high-energy pulsed lasers and methods of charging, triggering and switching including zenon flash tube operation.

Additional information

The types of laser (optical maser) of interest are solid state, ruby, or semiconductor injection lasers. Gas lasers are of no interest to me.

Many of the papers on holography will use the term 'wavefront reconstruction'

NATIONAL ELECTRONICS RESEARCH COUNCIL

50 BLOOMSBURY STREET, LONDON, W.C.1 TELEPHONE: MUSEUM 2073/3

Chairman: Admiral of the Fleet The Earl Mountbatten of Burma, K.G., P.C., O.M., D.Sc., M.I.E.R.E., M.I.E.E.

Appendix 3G

Dear

For our investigation of the SDI system we shall be inviting the participation of some 230 electronics research workers in universities and colleges of technology. In order to ensure that those we invite are representative of the total, we require to know the names of all those in the various departments who are engaged in, or concerned with the supervision of electronics* research.

We have found it impossible to obtain this information from published sources and are therefore seeking your help. We should be most grateful if you would let us have a list of all those in your Department who are engaged in or concerned with electronics research, including lecturing staff, research fellows and associates, and post-graduate students. As our investigation will extend over a period of 2 years it would be helpful if you would exclude, if possible, those who are expected to leave your Department before December 1968.

The lists we obtain in this way will be used to select our sample, who will then be invited individually to participate. Those you list will not be committed in any way.

We hope you will be able to supply us with this information, which we should like to have as soon as possible. A form is enclosed which you may care to use instead of writing a letter.

Thank you for your help.

Yours sincerely,

T. M. AITCHISON
Director

Dear

For our investigation of the SDI system we shall be inviting the participation of some 230 electronics research workers in universities and colleges of technology. In order to ensure that those we invite are representative of the total, we require to know the names of all those in the various departments who are engaged in, or concerned with the supervision of electronics* research.

We have found it impossible to obtain this information from published sources and are therefore seeking your help. We should be most grateful if you would let us have a list of all those in your Department who are engaged in or concerned with electronics research, including lecturing staff, research fellows and associates, and post-graduate students. As our investigation will extend over a period of 2 years it would be helpful if you would exclude, if possible, those who are expected to leave your Department before December 1968.

The lists we obtain in this way will be used to select our sample, who will then be invited individually to participate. Those you list will not be committed in any way.

We hope you will be able to supply us with this information, which we should like to have as soon as possible. A form is enclosed which you may care to use instead of writing a letter.

Thank you for your help.

Yours sincerely,

T. M. AITCHISON
Director

* Our definition of 'electronics' includes: communications, electroacoustics, electron optics, electron physics, electronic control, electronics instruments, medical electronics, microwave electronics, plasma electronics, propagation of e m waves, radar, radio, radio-astronomy, semiconductors, solid-state electronics, telemetry, television and thermionic valves.

Electronic Research Workers in Universities and Technical Colleges

University/College	Department	Number	Total
Aberdeen University and Robert Gordon's Inst. of Technology	Natural Philosophy	2	5
	Electrical Engineering	3	
Aberystwyth University College of Wales	Physics	20	20
Aston in Birmingham University	Electrical Engineering	12	20
	Physics	8	
Bangor Univ. College of North Wales	Electronic Engineering	55	68
	Physics	13	
Bath University	Electrical Engineering	11	24
	Physics	13	
Belfast Queen's Univ.	Physics	53	78
	Electrical Engineering	25	
Birmingham University	Electon. Physics Electronic & Elec. Eng. Physics	29	29
Bradford University	Electrical Engineering	10	12
	Physics	2	
Brighton College of Technology	Electrical & Elec. Eng.	6	16
	Applied Physics	10	
Bristol University	Physics	7	13
	Electrical Engineering	6	
Brunel University	Electrical & Elec. Eng.	4	8
	Physics	4	
Cambridge University	Electrical Engineering	19	24
	Physics	5	
	Engineering Laboratory	0	
Cardiff Univ. College of South Wales	Electrical & Elec. Eng.	7	12
	Physics	5	
Chelsea College of Science & Tech.	Physics	9	9
Coventry. Lanchester College of Tech.	Applied Physics Electrical Engineering	21	21

University/College	Department	Number	Total
Cranfield College of Aeronautics	Elec. and Control Eng.	10	10
Durham University	Physics	0	
	Applied Physics	14	16
	Engineering Science	2	
East Anglia Univ.	Maths. & Physics	0	0
Edinburgh Univ.	Electrical Engineering	25	
	Natural Philosophy	8	33
Essex University	Physics	4	4
Exeter University	Washington Singer Lab.	49	49
Glamorgan College of Technology	Physics and Maths.	5	5
Glasgow University	Electrical Engineering	16	
	Natural Philosophy	1	17
Hatfield College of Technology	Elec. Eng. and Physics		
Heriot-Watt University	Electrical Engineering	7	
	Physics	1	8
Hull University	Electronic Engineering	2	
	Physics	12	14
Hull College of Tech.	Electrical Engineering		2
Keele University	Communication	4	
	Physics	13	17
Kent at Canterbury University	Physics	2	2
Kingston Coll. of Tech.	Electrical Engineering	5	
	Physics	3	8
Lancaster University	Physics	0	0
Leeds University	Physics	31	
	Electrical & Elec. Eng.	29	60
	Medical Physics		
Leeds Coll. of Tech.	Electrical Eng. & Physics	2	2
Leicester University	Engineering	6	
	Physics	3	9

University/College	Department	Number	Total
Leicester Poly. College of Technology	Electrical Engineering	5	
	Physics & Applied Science	2	7
Liverpool University	Electrical Eng. & Elec.	46	
	Physics	1	47
Liverpool Poly. College of Technology	Electrical Engineering	5	5
LONDON			
Bedford College	Physics	9	9
Birkbeck College	Physics	7	7
Borough Polytechnic	Electrical Engineering		
	Physics	10	10
City University	Electrical & Elec. Eng.	21	
	Physics	9	30
Guy's Hospital Med. School		2	2
Imperial College	Electrical Engineering	50	
	Physics	12	62
King's College	Electrical Engineering	8	
	Physics	4	12
Middx. Hospital Medical School	Physics	2	2
Northern Polytechnic	Electronic & Com. Eng.		
	Physics	7	7
The Polytechnic	Electrical Engineering	2	
	Maths. & Physics	4	6
Queen Mary College	Electrical Engineering	12	
	Physics		12
Royal Holloway College	Physics	1	1
St. Bartholomews Hosp.	Med. Coll.	7	7
St. Homas's Hospital Medical School		2	2
University College	Electrical Engineering	46	
	Physics	1	47

University/College	Department	Number	Total
Woolwich Polytechnic	Physics	1	
	Electrical Engineering	5	6
	Materials Mol.Science		
Loughborough Univ.	Electrical Engineering	3	
	Physics	3	6
Manchester University	Electrical Engineering	19	
	Physics	62	81
	Nuffield Radio Astronomy Labs.		
Manchester Institute of Science & Tech.	Electrical Engineering	5	
	Physics		5
Newcastle-upon-Tyne University	Electrical Engineering	15	
	Physics	2	17
Newcastle-upon-Tyne Rutherford Coll.of.Tech	Physics	7	
	Electrical Engineering	3	10
Nottingham University	Electrical & Elec. En.	7	
	Physics	2	9
Nottingham Regional Coll. of Technology	Physics	2	
	Electrical Engineering	4	6
Oxford University	Engineering Science	45	
	Physics	10	55
Paisley Coll. of Tech.	Electrical Engineering	3	3
Plymouth Coll.of Tech.	Electrical Engineering	10	10
Portsmouth College of Technology	Physics	5	
	Electrical Engineering	9	14
Reading University	Applied Physical Sciences	6	
	Physics	12	18
Rugby Coll. of Eng. Technology	Applied Sciences	5	5
St. Andrews Queens Coll. Coll. United Coll.	Electrical Engineering	9	
	Physical Sciences	1	10
Salford University	Electrical Engineering	20	
	Pure & Applied Physics	2	22
Sheffield University	Physics	8	
	Electrical Engineering	12	20

University/College	Department	Number	Total
Southampton University	Electronics	59	63
	Physics	4	
Strathclyde University	Electrical Engineering	8	12
	Natural Philosophy	4	
Sunderland Tech. Coll.	Physics	6	6
Surrey University	Electrical Engineering	11	22
	Physics	11	
Sussex University	Experimental Physics		
	Engineering	3	3
Swansea University College	Electrical Engineering	22	41
	Physics	19	
Warwick University	Engineering Science	11	21
	Physics	10	
York University	Physics	8	8
			1362

Appendix 31

Universities	Questionnaire: Electronics Research workers	Users/ Controls	Total Invited	Total Replies	Suitable	Visits: Total Invited	Total Applies	Suitable	Early Research Students
Aberystwyth	20	c	20	11	10				1
Bangor	68	uc	30	28	19	10	6	6	9
Bath	24	u	24	25	18	18	12	12	-
Belfast	78	uc	38	36	22	11	6	4	14
Birmingham	29	u	29	28	28	28	27	23	3
Bradford	21	c	12	11	11				
Brighton	16	u	16	14	10	10	9	9	2
Bristol	13	c	13	13	11				2
Birmingham/ Aston	20	u	18	14	13	12	7	7	
Cambridge	24	u	24	22	21	21	16	14	
Cardiff	12	u	12	8	6	6	3	2	
Coventry	21	c	21	13	13				
Cranfield	10	c	10	9	9				
Dundee	9	c	9	3	3				
Edinburgh	33	uc	14	9	7	7	6	5	3
Essex	4	c	4	3	3				
Exeter	49	uc	22	16	8	4	3	3	
Edinburgh Heriot/Watt	8	u	8	6	6	4	4	4	
Glasgow	17	u	17	16	14	14	10	9	2
Keele	17	c	17	15	13				2
Kent	2	u	2	2	2	2	1	1	
Kingston	8	uc	8	5	5	5	4	3	

Appendix 3I 2

	Questionnaire					Users			
	Electronics Research Workers	Users/ Controls	Total Invited	Total Replies	Suitable	Total Invited	Total Applies	Suitable	Early Research Students
Leeds	60	uc	28	24	19	10	8	6	5
Liverpool U	47	uc	20	17	16	10	8	8	1
Liverpool C	5	c	5	5	5				
Loughborough		c							
London/Bedford	9	c	6	5	5				
London/Borough	10	c	10	4	4				
London/City	30	uc	14	14	14	7	6	5	3
London/Guys	2	c	2	2	2				
London/Imperial	62	uc	28	23	19	11	9	8	3
London/ Middlesex	2	c	2	2	2				
London/Northern Poly	7	u	7	7	5	3	3	3	2
London/QMC	12	u	12	8	7	7	7	7	1
London/Regent Poly	6	c	6	5	5				
London/Royal Holloway	1	c	1	1	1				
London/St Thomas	2	u							
London/Univ. College	47	uc	20	20	19	6	5	5	13
London/Woolwich	6	c	1	1	1				
Manchester	81	uc	40	27	19	10	5	5	7
Newcastle C	10	c	10	6	5				1

Appendix 31-3

	Questionnaire					Users			
	Electronics Research Workers	Users/ Controls	Total Invited	Total Replies	Suitable	Total Invited	Total Replies	Suitable	Early Research Students
Newcastle U	17	c	17	16	10				6
Nottingham	6	c	6	5	5				
Oxford	55	uc	24	21	18	10	6	6	3
Paisley	3	c	3	2	2				
Reading	18	u	18	15	14	14	10	9	1
Rugby	5	u	5	3	2	2	1	1	
Salford	24	c	22	10	10				
Sheffield	20	u	20	14	13	13	10	10	
Southampton	63	uc	28	24	18	13	11	11	6
Sunderland	6	c	6	5	5				
Swansea	41	uc	18	16	10	7	5	5	6
York	11	u	11	7	6	3	3	3	

Appendix 'C'

Government Establishment	Questionnaire: Electronics Research Workers	Questionnaire: Users/Controls	Users: Total Invited	Users: Total Replies	Users: Suitable	Users: Total Invited	Users: Total Replies	Users: Suitable	Early Research Students
Aldermaston			125	88	77	38	32	26	
Culham			59	41	35	17	14	8	
Daresbury			7	6	6	3	3	3	
Harwell			28	23	22	12	11	11	
Rutherford			45	28	21	10	6	6	
Winfrith			10	7	6	3	2	2	
AML									
ARL									
ASWE			45	28	28	14	6	6	
AUWE			38	18	10	6	6	3	
BBC			2	2	2	2	2	2	
CEGB			20	18	17	10	7	7	
GCHQ									
GPO			82	68	61	34	33	31	
MRC									
NCB			13	9					
NPL			13	11	10	6		5	
RAE			107	71	63	37	29	24	
RRE			75	65	63	41	30	29	
RSRS			41	35	35	19	14	14	
SERL			20	15	14	8	6	6	
SRDE			82	52	49	29	23	23	

Appendix 3I

Industrial Firms	Questionnaire: Electronics Research Workers	Questionnaire: Users/Controls	Questionnaire: Total Invited	Questionnaire: Total Replies	Questionnaire: Suitable	Users: Total Invited	Users: Total replies	Users: Suitable	Early Research Students
AEI Rugby			40	29	27	13	9	9	
AEI Leicestershire			50	32	28	17	11	8	
ASM									
BAC Stevenage			30	17	17	8	8	8	
Cossor									
Creed			16	11	10	5	2	2	
Elliott			66	44	37	21	51	16	
EMI			13	10	10	5	4	4	
EE, NRL			24	19		8	10	10	
EEV			40	12	7	4	8	8	
Evershed									
Ferranti, Wythenshawe			50	29	26	13	12	12	
Ferranti, Edinburgh			20	6	3				
Ferranti, Oldham									
GEC, Wembley			38	31	31	19	11	11	
GEC Stanmore			42	15	13	8	5	5	
Hawker Siddeley									
Hilger Watts									
Honeywell									
ICT Stevenage			44	29	19	15	9	8	
ICT Manchester			35	18	14	9	7	7	
George Kent			11	9	9	4	4	4	
Marconi			41	28	26	16	13	13	

Appendix 31

	Questionnaire				Users			
	Electronics Research Workers	Users/ Controls	Total Invited	Total Replies	Suitable	Total Invited	Total Replies	Suitable	Early Retrofit Students
Mullard			75	61	56	32	28	28	
Plessey, Notts			55	32	28	16	12	12	
Plessey, Poke			44	22	20	9	7	7	
Recal									
Rank									
Rediffusion			8	8	8	4	4	3	
Smith									
Sperry			10	7	6	3	-	-	
STL			30	16	16	10	10	10	
FMC			33	16	16	8	6	6	
Texas									
Thorn									
Ultra			4	1	-				

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SDI Investigation

The Role of the Project Associate

We are anxious to obtain from each organisation participating in the SDI investigation the assistance of a member of the organisation's information staff who will act as Project Associate. As Project Associate he will play an integral part in the investigation and will have a key role in the selection of research workers to receive the SDI service and in providing a link between them and the SDI staff.

We realise that this is an invitation to take on additional, unpaid, work, but we do believe that it will be of value to your organisation, of use to your information service, and of interest to you or the member of your staff who agrees to help us. For the SDI Investigation, such co-operation will be invaluable and virtually essential to its success.

We shall do everything possible to keep the work required of the Project Associates to a minimum. They may, of course, opt out at any time and arrange for us to deal direct with the recipients in their organisations.

We envisage the role of the Project Associate in each organisation as follows, although only his assistance in the initial selection of research workers is essential:-

(1) He would be the agent for the project in his organisation.

(2) If he agrees, all correspondence with the users would be routed through him. Two copies of each item of correspondence would be sent to him, one to be passed on to the user to whom it was addressed, the other for his retention. Thus, at minimum cost in effort, the Project Associate would be the channel through which his users receive communications. Alternatively, we could correspond direct with the users.

(3) If he wished, he would act as the local distributor of the weekly SDI notifications. These would be sent to him in bulk, addressed to each individual, for distribution. This would allow him to have the information service to his users under his control and to have advance notice of material he might be asked to supply. Alternatively, if he preferred, the notifications would be sent direct to each user.

(4) In addition there are a number of records we should like to have maintained, though not necessarily by all Project Associates. We are interested in finding out how many documents notified by the SDI service are of sufficient interest for the recipient to request them from his library or information service. We should also like to discover how receipt of the SDI service affects the recipient's use of his library or information service. As the results of these investigations should be of interest to the Project Associates personally, we hope that many of them will be willing to maintain the records.

Thus, in general, we hope that the Project Associate will be our liaison with the research workers in his organisation and an integral part of the SDI team.

4. Final questionnaire

Very little additional wastage will result here since all users who reach this stage will have been regularly cooperating with the investigation for a period of two years and thus a very high response rate can be expected from them.

Altogether we would hope that the loss of users either in stages 1-4 above or because change of job or drastic change of subject interests makes them ineligible for inclusion in the final sample, will not exceed 30 per cent.

Thus, starting with 600 users we may expect to be left with at least 400 by the end of the investigation. The question of whether this is a sufficient number on which to base statistically meaningful conclusions has been discussed with our consultant statistician. His advice is that a final sample of 400 will be sufficient to give results than can be accepted with a high degree of confidence except for the case where the change in information-gathering habits is so slight as to be in our opinion of no practical significance. (It is interesting to note that 400 was also the number of questions recommended by statisticians for the MEDLARS evaluation in Washington).

However it should be pointed out that a final sample of 400 assumes a maximum rate of wastage which is only an estimate. Thus, while we think that 600 will be a sufficiently large initial sample, it is only fair to say that we felt happier with the larger margin of error afforded by the originally suggested sample size of 800.

Users with interest outside SDI coverage

User No.	I/G/U	Date	Questionnaire	Field of interest	Comments
494	I	1/8/69	-	Packaging techniques Design of multilayer printed circuits transmission lines. New designs for hardware.	016-019 P=$\frac{0}{6}$ = 0% User asked for profile to be deleted. He would be happy to receive SDI if service covered his field.
205	G	26/9/69	P	Optical instrument design, Novel optical devices.	Performance of profile was consistently poor 014R = 33% 036-039 P = 28%
087	U	14/2/69	P	Solar quiet day magnetic variation. E region atmospheric tides.	User thought too many relevant docs were missed. 014P = 33% R = 100%.
020	U	13/6/69	-	Flames. mass spectrometers.	User was notified of very few docs (less than one per week) 013/4 R=100% P=100%
009	U	14/2/69	VP	High pressure techniques. NMR in solids.	017-019 P = 50%

In the case of the last four of the above users, it was suggested by SDI that they should withdraw.

User No.	I/G/U	Date of DU	Q	Comments
441	I	6/6/69	G	Left U. K. for Canada 029-032P= $\frac{16}{54}$ = 30%
351	G	5/9/69	G	Left U.K. for Jamaica 037-040P=$\frac{7}{15}$ = 47%
324	G	1/8/69	F	Left U.K. for Canada 038-042P=$\frac{29}{37}$ = 78% User offered to continue in the investigation.
188	U	16/5/69	VG	Left U.K. to take up post overseas 027-030P= $\frac{38}{48}$ = 79%
086	U	26/9/69	G	Left U.K. for Canada 014-023P =$\frac{27}{30}$=90%R=$\frac{15}{21}$=71% User said in letter of 17/9 that he had found many of the printouts extremely relevant and he would have overlooked many of the references without the SDI services
014	U	26/9/69	VP	Left U.K. for Canada 045-050P =$\frac{19}{20}$ = 95% User was willing to have notifications sent to him in Canada.
010	U	6/6/69	F	Left U.K. for Australia 024-035P = $\frac{30}{35}$ = 86% User said that he had been favourably impressed with the service over the last two months.
422	I	26/9/69	G	Left U.K. for Israel 039-042P = $\frac{30}{46}$ = 65%
408	I	1/8/69	F/G	Left U.K. for U.S. 037-040P = $\frac{34}{50}$ = 68%
133	U	21/11/69	G	Left U.K. for Canada 014R = $\frac{2}{4}$ = 50% P = $\frac{3}{6}$ = 50%
089	U	21/11/69	P	Left U.K. for Australia 051-057P = $\frac{1}{7}$ = 14%

Users withdrawing because of change of circumstances.

(Includes change of interests, completion of research project, change of place of employment, moving from research to administrative work, etc.)

User No.	U/G/I	Date of DU	Q	Comments
498	I	5/9/69	G	User considered the experiment (i.e. his SDI participation) had been successful. 038-041 P= $\frac{15}{17}$ = 88%
496	I	28/2/69	-	003-004 R=$\frac{1}{2}$=50% P=$\frac{2}{3}$=67%
493	I	6/12/69	-	002-004 R=$\frac{3}{12}$=25% P=$\frac{9}{12}$=75%
457	I	10/1/69	-	001-004 R=$\frac{9}{14}$ =64% P=$\frac{10}{30}$=33%
451	I	6/6/69	F	027-030 P=$\frac{34}{45}$=75%
439	I	6/6/69	F	Precision poor 026-029P=$\frac{4}{16}$ ($\frac{1}{16}$) =25% (6%)
395	I	6/12/69	-	001-002 R=$\frac{9}{10}$=90% P=$\frac{13}{15}$=87%
390	G	3/1/69	-	P=32% R=26% (004-6 and 012-015)
371	G	31/10/69	G	039-042 P= $\frac{19}{28}$ = 68%
378	G	13/6/69	G	User would like to continue participating as he proposes to set up as a consultant dealing with architectural acoustics and noise control 016-019P = $\frac{5}{9}$ = 56%
124	U	10/1/69	-	User refused offer of a new profile because of pressure of work. 007-012P =$\frac{7}{22}$=32%
068	U	25/4/69	-	User has completed his studies at Cambridge 001-002 P=$\frac{3}{3}$ = 100% R=$\frac{2}{8}$ =25%
062	U	26/9/69	F	032-036 P $\frac{41}{63}$ = 65%
8	U	1/8/69	G	User had been impressed with the service 033-037 P= $\frac{33}{44}$ =75%

Continued.

Users withdrawing because of change of circumstances

User No.	U/G/I	Date of DU	Q	Comments
017	U	19/9/69	VG	Interests changed to marine geophysics 045-050 P= $\frac{24}{34}$ = 71%
465	I	27/11/68	-	001-006 R=$\frac{8}{15}$ =53% P =$\frac{16}{30}$ = 53%
172	U	5/12/69	P	User no longer engaged in research 014 & 023 R= $\frac{0}{3}$ = 0% 037, 39 and 44P=90%
519	I	21/11/69	F	User would like to continue with SDI when new information requirements are known. 014 and 023 R= $\frac{35}{38}$ = 92% P= $\frac{55}{59}$ =94%
057	U	21/11/69	F	051-056 P=$\frac{7}{10}$ = 70%

Users withdrawing because of pressure of work

Users No.	U/G/I	Date of DU	Q	Comments
507	I	2/5/69	F	014 P= $\frac{12}{29}$ = 41% R = $\frac{5}{6}$ = 83%
563	I	28/2/69	F	014 P= $\frac{9}{9}$ = 100% R = $\frac{4}{4}$ = 100%
345	G	2/5/69	-	User wasn't being notified of many articles. 012 P = $\frac{1}{1}$ = 100%
275	G	14/3/69	-	016-019 P = $\frac{10}{20}$ = 50%
154	U	16/5/69	F	014 P = $\frac{8}{12}$ = 65% R = $\frac{13}{26}$ = 50% User repeatedly asked for abstracts to be provided (005,006,and 013 returns and questionnaire return).

Users finding SDI of little use

User No.	U/G/I	Date of DU	Q	Field of interest	Comments
558	I	26/9/69	G	Microstrip and microwave ICs. Gunn effect devices. Microwave ferrites and semiconductor devices.	014 $R=\frac{25}{40}$ =62% $P=\frac{29}{29}$ = 100% User would find service useful if it included articles from U.S. and U.k. government research reports
234	G	26/9/69	F	Pile dosimetric techniques. Neutron detectors. Effects of radiation in BF3 and He-3 counters.	034-038 $P=\frac{4}{6}$ = 67% User's interests not adequately covered. He is now receiving SDI service based on Nuclear Science Abstract tapes.
232	G	26/9/69	P	Theory and design of control systems. servomotors. GaAs light emitting diodes.	015-019 $P=\frac{24}{44}$ =55% User said that library and information services at Culham cover most of his requirements.
066	U	13/6/69	G	Propagation of waves through plasmas. Plasma devices. Solid state microwave devices.	019-022 P= $\frac{13}{17}$ = 76% No reason for withdraw given, but user does receive a special information service (Culham Service on Plasma Physics)
235	G	14/2/69	G	Nuclear physics instrumentation.	User dissatisfied with both precision and recall 001-004 $P=\frac{6}{10}$ =60% R = $\frac{4}{9}$ = 44%
247	G	21/11/69	F	Control systems. Light current engineering.	User was not reading many of the articles notified to him.

Nonparticipating Users

User No.	U/G/I	Date of DU	Field of Interest	Comments
729	U	13/6/69	Radiation physics Blood flow measurement. Radiation biology.	Coverage of field isn't very good.
702	U	13/6/69	Radio receiving systems. Display equipment.	
474	I	14/3/69	Trunk radio systems. Antenna theory & construction.	002 Precision = $\frac{10}{12}$=83%
429	I	14/3/69	Paging & operating systems for computers Real time computer systems	User was distrubed by complete lack of relevant items in the test collection bulletin. Poor coverage of field.
252	G	13/6/69	Network theory transformers & inductors. magnetic materials	003-005 P=$\frac{18}{57}$=31% There was considerable delay in another user at A.U.W.E receiving material. This may have happened in the case of this user.
250	G	6/12/68	Magnetic core material and tape recorders. photographic sound recording. Gunn effect. Xenon lamps.	003-004 R=$\frac{3}{9}$=33% P=$\frac{5}{9}$=56% Enormous delay in user receiving correspondence (fault of A.U.W.E.)
140	U	16/5/69	Energy losses of slow electrons thro' thin films. Plasma oscillations & optical constants of metals.	Wrong addressing of correspondence and other inefficiency by SDI probably caused user to lose interest
044	U	13/6/69	Signal processing. sonar. Radar	User moved from Birmingh'm Univ. to Loughborough & was abroad for several weeks after that.

Users deleted because of failure to return notifications

User No.	U/G/I	Date of DU	Q	Field of interest	Comments
449	I	13/6/69	F	Photemissive cells. photomultipliers. camera tubes & image sensors. display applications of losers. CRTs and solid state display devices.	013-016 $P=\frac{9}{18}(\frac{5}{18})=50\%(28\%)$ User considers that he many irrelevant notifications.
283	G	13/6/69	F	design & construction of cables for telecommunications.	015-019 $P=\frac{4}{7}(\frac{2}{7})=59\%(29\%)$ Poor coverage of user's interests. User considers too many potentially relevant articles are missed.
128	U	20/6/69	G	Gas discharge physics. Plasma chemistry.	014 $R=\frac{9}{11}=82\%$ 011-020 $P=\frac{98}{132}(\frac{25}{132})=74\%(19\%$ User has said that too many items are of minor interest. The proportion of RD2 in the notifications is high.
120	U	13/6/69	-	Microwave techniques & measurements. Microwave semiconductor devices.	014-015 $P=\frac{24}{26}=92\%$
093	U	10/1/69	-	Thin film piezoelectric transducers	User failed to reply to letter asking him to state his new interests. (No performances figures).
080	U	13/6/69	-	Optical coherence nonlinear optics	014 $P=\frac{11}{19}=58\%$ $R=\frac{7}{14}=50\%$
037	U	13/6/69	-	Optical communication systems. gas lenses. electroptic modulators.	012 $P=\frac{2}{2}(\frac{1}{2})=100\%(50\%)$

Users deleted because of failure to return notifications

User No.	U/G/I	Date of DU	Q	Field of interest	Comments
484	I	25/4/69	-	ICs. piezoelectric devices, LASCRS. photovoltaic cells.	012-016 P=12/16(7/16)=75%(44%) (not 014) 014 R=7/8=87% As library facilities at Watton-at-Stone are poor user prefers to deal with notifications in batches
709	U	13/6/69	-	III-V & II-VI semiconductors. semiconductor heterojunctions.	No other member of the group was willing to receive notifications while Dr. Owen was in America 015-017 P=62/75(21/75)=83%(28%)
493	I	21/11/69	-	LSI. Microelectronics.	035-038 P=8/14=57%
162	U	21/11/69	VG	Magnetic alloys & transition metals.	026-030 P=15/17=88%
26	G	21/11/69	-	Thin film deposition. Laser applications.	029-033 P=19/21=90%
228	G	21/11/69	F	Digital computer peripheral equipment.	021-025 P=26/39=67%
241	G	21/11/69	F	ICs FETs . semiconductor detectors. equipment reliability.	User was receiving very low no. of RDIs. (5% on 028-037) 033-037 P=8/9 = 89%
475	I	21/11/69	F	Generation of oscillations. frequency synthesis	026-029 P=18/24=75% User does consider the investigation important. He probably withdrew because of pressure of work

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INSPEC

INSPEC SDI Service in Electronics

Periodicals regularly scanned for the service

The SDI Service covers periodical articles in English on all aspects of electronics. The periodicals are selected from those received by Science Abstracts and include English language journals, English translations of foreign journals as well as foreign journals which frequently contain articles in English.

The list below includes only those titles which are regularly scanned for the SDI Service. The complete list of periodicals received by Science Abstracts may be found in the List of Journals and Reports published with the cumulative indexes. The present list follows the method of alphabetical listing used by Science Abstracts, e.g. Journal of the Acoustical Society of America appears under Journal and Proceedings of The Institution of Electrical Engineers under Proceedings.

Fuller details of any periodical listed below, including publisher, will be found in the Science Abstracts' list.

Secretary: G. F. Gainsborough, Ph.D., C.Eng., F.I.E.E.

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List of Periodicals

AEI Journal of Telecommunications - Associated Electrical Industries
AWA Technical Review - Amalgamated Wireless Australasia
Acta Crystallographica
Acta Physica Austriaca
Acta Physica Polonica
Acta Polytechnica Scandinavica
Advances in Physics
Alta Frequenza - Associazione Elettrotecnica Italiana
American Ceramic Society Bulletin
American Journal of Medical Electronics
American Journal of Physics
Annales Association International Calculation Analogique
Annals of Physics
Applied Acoustics
Applied Optics
Applied Physics Letters
Applied Physics Quarterly
Applied Scientific Research
Asea Research
Astronomical Contributions of the University of Manchester
Astronomical Journal
Astronautics and Aeronautics
Astrophysical Journal
Astrophysical Journal Supplement
Astrophysics
Astrophysical Letters
Australian Journal of Instrumentation and Control
Australian Journal of Physics
Australian Telecommunication Research
Automatic Electric Technical Journal
Automation and Remote Control
Automatica
Automation
BBC Engineering Division Monographs
Bell Laboratories Record
Bell System Technical Journal
Bio-Medical Engineering
British Journal of Applied Physics (J. Physics D.)

British Journal of Radiology

Budavox Telecommunications Review

Bulletin of the Academy of Sciences of the USSR-Atmospheric and Oceanic Physics Series

Bulletin of the Academy of Sciences of the USSR-Physical Series

Bulletin of the American Meterological Society

Bulletin of the Electrotechnical Laboratory (Japan)

Bulletin of the Tokyo Institute of Technology

Canadian Journal of Physics

Cathode Press

Chemical Physics Letters

Combustion and Flame

Comments on Astrophysics and Space Sciences

Comments on Solid State Physics

Communications of the ACM

Component Technology

Computers and Automation

Computers and Biomedical Research

Computer Bulletin

Computer Design

Computer Journal

Computing

Contemporary Physics

Control

Control Engineering

Cosmic Research

Cryogenics

Cybernetica

Cybernetics

Cybernetics and Electronics on the Railway

Czechoslovak Journal of Physics

Data Base

Date Systems

Defence Science Journal

Design Electronics

Direct Current

EBU Review, Part A (Technical)

Electrical Communication
Electrical Engineering in Japan
Electrochemical Technology
Electrochimica Acta
Electronic Applications
Electronic Communicator
Electronic Components
Electronic Design
Electronic Engineering
Electronic Industries
Electronica
Electronics
Electronics and Communications in Japan
Electronics and Power
Electronics Letters
Electronics World
Electro Technology (India)
Electro Technology (USA)
Engineering Bulletin
Engineering Cybernetics
Engineering Journal (Canada)
Environmental Engineering
Ericsson Review
Ericsson Technics
Frequency
Fujitsu Scientific and Technical Journal
GEC - AEI Journal
GEC Journal of Science and Technology
GEC Telecommunications
General Radio Experimenter
Geomagnetism and Aeronomy
Geophysical Journal of the Royal Astronomical Society
Geophysics
Hewlett Packard Journal
Helvetica Physica Acta
Hitachi Review
Human Factors

IBM Journal of Research and Development

IBM Systems Journal

IEEE Journal of Quantum Electronics

IEEE Journal of Solid State Circuits

IEEE Spectrum

IEEE Transactions of Aerospace and Electronic Systems

IEEE Transactions on Antennas and Propagation

IEEE Transactions on Industry and General Applications

IEEE Transactions on Audio and Electroacoustics

IEEE Transactions on Automatic Control

IEEE Transactions on Bio-Medical Engineering

IEEE Transactions on Broadcast and Television Receivers

IEEE Transactions on Broadcasting

IEEE Transactions on Circuit Theory

IEEE Transactions on Communication Technology

IEEE Transactions on Electronic Computers

IEEE Transactions on Electrical Insulation

IEEE Transactions on Electromagnetic Compatibility

IEEE Transactions on Electron Devices

IEEE Transactions on Geoscience Electronics

IEEE Transactions on Industrial Electronics and Control Instrumentation

IEEE Transactions on Industry and General Applications
Institute of Electrical & Electronics Engrs.

IEEE Transactions on Information Theory

IEEE Transactions on Instrumentation and Measurement

IEEE Transactions on Magnetics

IEEE Transactions on Human Factors in Electronics

IEEE Transactions on Microwave Theory and Techniques

IEEE Transactions on Nuclear Science

IEEE Transactions on Power Apparatus and Systems

IEEE Transactions on Parts, Materials and Packaging

IEEE Transactions on Reliability

IEEE Transactions on Sonics and Ultrasonics

IEEE Transactions on Systems Science and Cybernetics

IEEE Transactions on Vehicular Technology

ISA Transactions

Illuminating Engineering

Indian Journal of Meteorology and Geophysics

Indian Journal of Physics and Proceedings of the Indian Association for the Cultivation of Science

Indian Journal of Pure and Applied Physics
Indian Journal of Technology
Industrial Electronics
Information and Control
Infrared Physics
Instrumentation
Instrument Construction
Instruments and Control Systems
Instrument Engineer
Instruments and Experimental Techniques
Instrument Practice
Instrument Review
Instrumentation Technology
Insulation
International Electronics
International Journal of Applied Radiation and Isotopes
International Journal of Electrical Engineering Education
International Journal of Electronics
Israel Journal of Technology
Japan Electronic Engineering
Japan Telecommunications Review
Japanese Journal of Applied Physics
Japanese Journal of Geophysics
Japanese Journal of Electron Microscopy
JETP Letters
Journal of the Acoustical Society of America
Journal of the American Ceramic Society
Journal of Applied Crystallography
Journal of Applied Physics
Journal of the Association for Computer Machinery
Journal of the Atmospheric Sciences
Journal of Atmospheric and Terrestrial Physics
Journal of the Audio Engineering Society
Journal of Chemical Physics
Journal of Computer and System Sciences
Journal of Crystal Growth
Journal of the Electrochemical Society
Journal of the Electrochemical Society of Japan

Journal of Electronics and Control

Journal of the Electronics Division of the American Society for Quality Control

Journal of the Franklin Institute

Journal of Geomagnetism and Geoelectricity

Journal of Geophysical Research

Journal of the Institute of Electrical Communication Engineers of Japan

Journal of the Institute of Navigation

Journal of the Institute of Television Engineers of Japan

Journal of the Institution of Engineers (India)

Journal of the Institution of Telecommunication Engineers

Journal of Materials Science

Journal of the Mechanics and Physics of Solids

Journal of Molecular Spectroscopy

Journal of the Optical Society of America

Journal of Optimization Theory and Application

Journal of Physical Chemistry

Journal of the Physical Society of Japan

Journal of Physics A Proceedings of the Physical Society (General)

Journal of Physics B Proceedings of the Physical Society (Atomic and Molecular Physics)

Journal of Physics C Proceedings of the Physical Society (Solid State Physics)

Journal of the Physics and Chemistry of Solids

Journal of Plasma Physics

Journal and Proceedings of the Institution of Electrical and Electronics Technician Engineers

Journal of Quantitative Spectroscopy and Radiative Transfer

Journal of the Radio Research Laboratories

Journal of Research of the National Bureau of Standards

Journal of the Royal Astronomical Society of Canada

Journal of Scientific and Industrial Research (India)

Journal of Scientific Instruments (Journal of Physics E)

Journal of the Society for Industrial and Applied Mathematics Series A Control

Journal of the Society of Motion Picture and Television Engineers

Journal of Sound and Vibration

Journal of Spacecraft and Rockets

Journal of Vacuum Science and Technology

Kumamto Journal of Science Series A

Lighting Research

Lucas Engineering Review

Massachusetts Institute of Technology Research Laboratory of Electronics Technical Report

Marconi Instrumentation
Marconi Review
Materials Research and Standards
Materials Research Bulletin
Mathematics of Computation
Measurement and Control
Measurement Techniques
Medical and Biological Engineering
Metron
Microelectronics and Reliability
Microwaves
Microwave Journal
Mining Electrical and Mechanical Engineer
Mitsubishi Denki Laboratory Reports
Molecular Physics
Monograph of the Research Institute of Applied Electricity
Monthly Notices of the Royal Astronomical Society
Motorola Monitor
Muirhead Techniques
Mullard Technical Communications
Nachrichtentechnische Zeitschrift
Nature
New Zealand Journal of Science
NEC Research and Development
NEC Review
NHK Laboratories Note NHK Technical Research Lab.
NHK Technical Monograph
Nuclear Instrument and Methods
Nucleonics
Nuovo Cimento
Operations Research
Operational Research Quarterly
Optica Acta
Optics Communications
Optics and Spectroscopy
Pakistan Journal of Scientific and Industrial Research
Periodica Polytechnica (Electrical Engineering)
Phillips Research Reports

Phillips Research Reports Supplements

Phillips Technical Review

Phillips Telecommunication Review

Philosophical Transactions of the Royal Society of London

Physica

Physica Norvegica

Physica Status Solidi

Physical Review

Physical Review Letters

Physics

Physics and Chemistry of Glasses

Physics in Medicine and Biology

Physics Letters

Planetary and Space Science

Plasma Physics

Plessey Communication Journal

Point to Point Telecommunications

Post Office Electrical Engineers Journal

Problems of Cybernetics

Problems of Information Transmission

Proceedings of the Astronomical Society of Australia

Proceedings of the Institute of Electrical and Electronics Engineers

Proceedings of the Indian Division of the Institution of Electronic and Radio Engineers

Proceedings of the Institution of Electrical Engineers

Proceedings of the Institution of Radio and Electronics Engineers of Australia

Proceedings of the National Academy of Sciences of the United States of America

Proceedings of the Physical Society

Proceedings of the Royal Irish Academy

Proceedings of the Royal Society of Edinburgh

Proceedings of the Royal Society of London Series A

Proceedings of the Society of Relay Engineers

Process Control and Automation

Progress in Control Engineering

Progress in Cryogenics

Progress in Elementary Particle and Cosmic Ray Physics

Progress in Materials Science
Progress in Semiconductors
Pure and Applied Geophysics
Quarterly Journal of the Royal Astronomical Society
Quarterly Journal of the Royal Meteorological Society
Radiation Research
Radio and Electronic Engineer
Radio Electronics
Radio Engineering and Electronic Physics
Radio Science
Radiology
Railway Signalling and Communications
RCA Review
Report of Ionosphere and Space Research in Japan
Reports of the Research Institute of Electrical Communication
Research
Review of the Electrical Communication Laboratory
Review of Scientific Instruments
Royal Television Society Journal
Science
Science of Light
Scientia Electrica
Scientific Researches
Siam Review
Society for Industrial and Applied Mathematics Journal on Control
Simulation
Solid State Communications
Solid State Electronics
Solid State Physics
Solid State Technology
Sound and Vision Broadcasting
Soviet Astronomy
Soviet Electrical Engineering
Soviet Journal of Optical Technology
Soviet Physics - Acoustics
Soviet Physics
Soviet Physics - JETP
Soviet Physics Journal

Soviet Physics - Semiconductors
Soviet Physics - Solid State
Soviet Physics - Technical Physics
Soviet Physics - Uspekhi
Soviet Radio Engineering
Soviet Radiophysics
Sperry Rand Engineering Review
Surface Science
Systems Technology
Technical Journal of Japan Broadcasting Corporation
Telecommunicatii
Telecommunications
Telecommunications and Radio Engineering Part 1 and 2
Telecommunications Journal
Telecommunication Journal of Australia
Tele. Meddelanden fran Kungliga Telestyrelsen
Telephony
Teleteknik
Thin Films
Thin Solid Films
Transactions of the Illuminating Engineering Society
Transactions of the Metallurgical Society of AIME
Transactions of the Royal Society of Canada
Transactions of the Royal Society of Edinburgh
Transactions of the Society of Instrument and Control
Transactions of the South African Institute of Electrical Engineers
Ultrasonics
Undersea Technology
Vacuum
Westinghouse Engineer
Wireless World
World Medical Electronics

Meeting held at OSTI, Elizabeth House, Thursday 10th April to examine progress in provision of a satisfactory computer service by DPC for the SDI Investigation.

Present: R. Fairbairn, D. May, D. Russon (OSTI)
A. G. Price (DPC), T. M. Aitchison, P. Clague.

Alan Price was asked to report progress on the renumbering programs, the completion and proving of which are essential before the operational period can be assumed to start.

Mr. Price reported that difficulties still remained in the programs though three computer runs had been made in the preceding week. Turn round time from NCC was extremely slow and time on the machine was becoming difficult to obtain since the KDF 9 had been sold to NPL and NCC's interest in it was minimal. Their main interest was to sell off the time available in large blocks to users, thus making quick, short-time access of the type required for program testing difficult.

The possibility of obtaining time on other KDP9 installations was questioned since there was a general shortage of such time. In any case operation at more remote centres would create as many problems as it would solve. Transfer of the SDI weekly runs to another centre for a short time to free time for program testing was considered but was thought inadvisable and not likely to contribute toward solving the real problem, which was rapid access for short times at frequent intervals.

The possibility of starting the operational period before completion of renumbering was raised by D. May but it was agreed that this had been discussed and ruled out at an earlier meeting.

D. May then asked when the programs would be ready. A. Price was unable to give any date. D. May stated that delay was costing £1,000 per month and all efforts to complete the work should be made. The availability of additional staff to help on the program testing was raised but Alan Price was of the opinion that none of his DPC staff was competent to take on this work within any reasonable time. The possibility of delays being greater owing to Alan Price's frequent absence from Manchester was raised but he considered that providing he was present for two or three days per week the delays would not be significantly greater than if he were present continuously. The main problem was machine time.

To ensure adequate machine time it was decided that Alan Price should make block bookings of time at regular intervals in the week since this cost, though heavy, was likely to be less than the cost of continued delay.

It was also agreed that the possibility of securing the help of an NCC programmer to look at the material and turn it round quickly would be explored. This might also serve to alleviate the problem of delay caused by errors in data preparation (done by NCC for DPC).

A. Price would arrange block bookings and he planned to have six computer runs by the date of the next meeting fixed for Thursday 24th April at Elizabeth House.

(During the discussion it was stated by A. Price that he had already written a program modification which would provide printout listing the descriptors in the Descriptor File and showing the profiles associated with each. This modification would not, of course, be input or tested until the present batch of modifications had been cleared.)

14th April, 1969.

18th March 1969

Mr. A. G. Price,
Documentation Processing Centre
Quay House
Quay Street
Manchester 1.

SDI Investigation

May I have your confirmation of the following record of our brief discussion of 12th March 1969:

(1) You hope to complete the re-numbering of profiles and the incorporation of program modifications by 1st April 1969.

(1a) If this date is met, the further work required before the start of Phase 5 (see Mr. J. R. Smith's letter of 3rd February 1969) will have to be carried out subsequently, viz, DPC's checking of the re-numbered profile file, checking by DPC and IEE that all the outputs are satisfactory, and completion and up-dating of the profile file over three runs.

(2) You believe that it will be possible to amend the error report produced when an attempt is made to delete a descriptor which is still in use by other profiles: the amended program would list the numbers of those other profiles. This would allow us to obtain, for selected descriptors, the information which we expected the re-numbering would allow us to obtain, i.e. a listing of the descriptors and the numbers of the profiles in which they are used (in which the profiles could be clearly identified from their unique three-digit number). However, you can give no date for the incorporation of such a program modification.

(3) Since no programming effort (other than your own) is available within DPC to work on the SDI programs, either to fulfil present requirements (i.e. a printout of the descriptor file and of the (unique) profile numbers

p.t.o.

associated with each descriptor) or to provide further analysis outputs, it was agreed that you will seek to obtain external programming effort (on a continuing contract basis) from ICL or Salford University, or elsewhere, and will indicate the outcome by 1st April 1969 so that IEE may evaluate the position.

Please let me know at once if you do not agree with the above record.

As the profile re-numbering has been in hand or under discussion for more than a year, it seemed useful to give the story as we see it. If this does not agree with your version, perhaps you would let us know.

T. M. Aitchison
Manager, Information Research

TMA/JM

Re-numbering of SDI Profiles
History and Position at 14th March 1969

The need to have the last three digits unique in the five-digit profile number first came to light at a meeting at DPC of Mr. Clague and Mrs. Pendlebury with Mr. Aspinall of English Electric on 8th February 1968.

On 29th March 1968 it was proposed by DPC that the profile re-numbering should be carried out by program. This was agreed and IEE instituted a new sequence of five-digit numbers, with a unique final three digits, for their clerical operations.

Over the next few months the re-numbering requirement was mentioned in 'phone calls but was somewhat overshadowed by more immediate difficulties. Subsequently, from June onwards, it became a frequent topic of concern in our 'phone calls.

In a 'phone conversation on 10th September 1968, DPC reported that the re-numbering program had been written and appeared to be working except for the printing. In a further conversation on 22nd October 1968 it was agreed that (i) the few residual errors should be given a lower priority than the re-numbering program which would be completed and de-bugged by the end of October, (ii) IEE would send the first quarter of the new numbers immediately (and the remainder in three tapes), and (iii) DPC would hire clerical labour to carry out the checking of the new file. Subsequent 'phone calls during November, December, January and February established that the re-numbering program was still not working.

At a meeting between OSTI, DPC and IEE at State House on 25th February 1969, it was agreed that a starting date of 1st April 1969 for Phase 5 should be aimed for. In the discussion and subsequently, however, it was established that the re-numbering program as at present written will make it impossible to print a list of the descriptors and the numbers of the profiles in which they are used.

(Although no written statement of the need to have this output has been made, the requirement was stated verbally and, in fact, such an output, based on the old profile numbers, was produced by DPC on 23rd May 1968. Without the need for this output, the re-numbering is probably unnecessary and the element of the delay in the project caused by the re-numbering program could have been avoided.)

It would seem that, in addition to compiling a program which will delete the profiles with the original five-digit numbers and re-input the same profiles with the new five-digit (unique three-digit) numbers, DPC have modified the program so that, instead of the unique last three digits of each profile in which it is used being posted to each descriptor, all five digits of the profile number will in future be so posted. As a consequence of this the details are no longer held in a form which allows a printout of the file (i.e. by a tape dump) without the writing of an additional program. It is to obtain the writing of this program (and the possibility of obtaining other analysis outputs by program additions that the enlisting of external programming assistance has been suggested by IEE.

Record of telephone conversation between P Clague (IEE) and A G Price (DPC) on 28/2/69

1. Feasibility of 1 April start for Phase 5

DPC are working to target date of 1 April for completion of renumbering. Since we shall need some time to tidy loose ends (e.g. profiles with changed numbers since preparation of last data tapes) Alan Price agrees that chance of 1 April start is NIL.

I think that, in view of previous delays, completion of renumbering by 1 April is unlikely but if this date is met without residual problems we might absorb the extra time required and consider Phase 5 to start from 1 April. But see below.

2. Program modifications are tied up with renumbering. Only a few errors remain to be cleared. Rejection of some profiles after second week is being countered by regular reinput. Some of this problem is complex and needs considerable study.

3. Analytical program

a) Descriptor usage - already operating - presumed output data is correct - we need to check if possible.

b) Descriptor match - program will produce output but Alan is not sure how the data is collected and will examine program this week-end to discover this. He will let us know so that we can check whether it is giving the data required.

c) Relevancy - program was tested earlier and goes through the correct motions. We can test the output by sending test data and evaluating the results against manual data.

d) Document notification analysis. No mention of this on the specification but a print-out of document numbers and associated counts was received in Dec 67 when DPC were first testing the program. I pointed out that such an analysis is very useful and Alan said he would look to see whether this was included in the Options available.

4. Descriptor file print-out showing associated profiles

This is vital data if we are to improve the service. The whole of the renumbering was aimed at providing the possibility of this data.

The requirements in order of desirability are:-

a) Descriptor file print-out showing associated profile numbers where the profile nos. are unique.

b) Descriptor file tape edit in decipherable form.

c) Error message in response to DOD message showing the numbers of the profiles using the descriptor.

The first (a) requires a program to be written - a simple job since the file structure is very well documented. Only one person at DPC has experience of KDF9 programming and he is committed to Medlars work for some 6-7 weeks. Possibly the job could be subcontracted to English Electric but this would mean extra spending outside DPC and English Electric are running down on the KDF9 side and availability of staff to do this is uncertain particularly within a short time. Estimate of job is 3 man weeks.

b) is almost certainly not on. New file has no character information. It would entail conversion of octal to binary to decimal by person attempting to read the print-out. Months of work.

c) This depends on the information available to the error checking procedure. It may only have the count of numbers of profiles using that descriptor. If zero the descriptor is deleted.

Alan has promised to look into this problem - in particular the possibility (c) and will let us know.

5. I suggested the desirability of a closer relationship between DPC and us over the SDI work and pointed out the unsatisfactory nature of the present situation where he alone could do any work on the programs while his duties made him absent so often.

He agreed but the difficulties over passing on the responsibility are:-

a) Only one person on his staff has any KDF9 experience and this is very limited.

b) It required some three months effort on Alan's part to become 'au fait' with the SDI programs and he would expect a greater time would be required by this member of staff before he could make any contribution.

c) There would be so little Investigation time left at the end of this training period that there would be little 'pay-off' for us or DPC.

Alan fully accepts that the weekly service is only the basic material for the Investigation and that the analytical programs and consultation between us and DPC is necessary for proper pursuit of the Investigation. However there are basic problems.

a) Only he can do the work involved within the time scale.

b) He can devote insufficient time to it.

c) The SDI programs are unsufficiently flexible to allow data not already specified at the time of writing to be readily extracted even by experienced programmers.

In summary it is quite clear that unless Alan Price considers (or can be persuaded to consider) the SDI analytical programs as of considerable priority we are unlikely to progress with these.

Appendix 9A.

Profile No._____

SDI Service Questionnaire

1. What is your opinion of the SDI service you have been receiving over the last two months? (Please do not consider our feelings in this)

☐ Very poor ☐ Poor ☐ Fair ☐ Good ☐ Very good

2. Which aspect of the service appears least satisfactory

☐ Too many items are irrelevant

☐ Too many items are of minor interest

☐ Too many potentially relevant articles are missed

☐ Other (Please state)

3. When you are assessing the relevance of the notifications (1, 2 or X), are those items which you are "2"

☐ of only minor interest? (i.e. Their removal would improve your notifications)

☐ of moderate interest? (i.e. Many could be eliminated without detriment to thenotifications)

☐ of considerable though not primary interest? (i.e. They provide useful information)

If you distinguish them in some other way, please explain.

4. How many English-language periodical articles relevant to your interests do you estimate are published each year?

☐ less than 10 ☐ between 10 and 100

☐ between 100 and 1000 ☐ over 1000

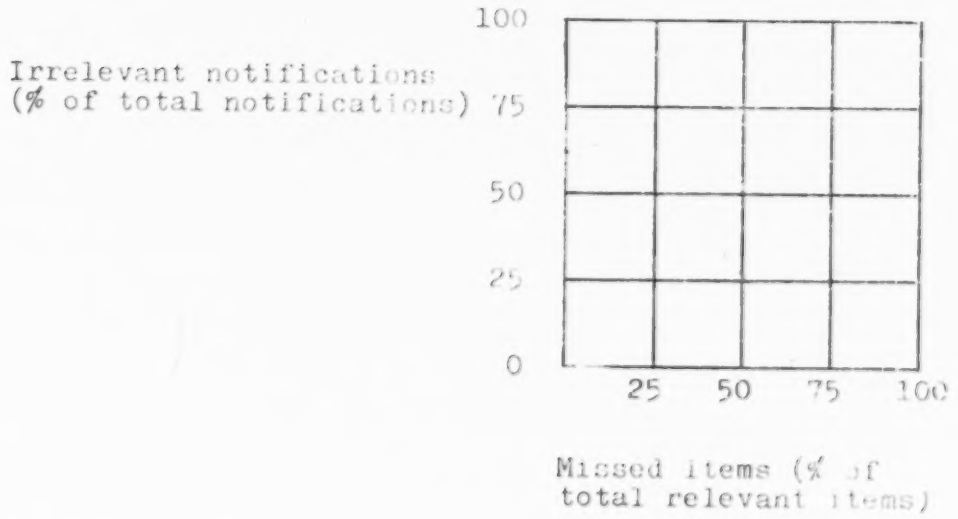
5. a) The ideal SDI service would provide no irrelevant notifications and miss no relevant items. Accepting that a compromise has to be made, would you prefer a service which:-

☐ produces few irrelevant notifications even at the cost of missing a substantial proportion of relevant items.

☐ misses few relevant items even though the proportion of irrelevant notifications is high.

☐ seeks a compromise between the above two.

b) The range of choice possible is illustrated by the generalized SDI performance curve below. Please indicate the point on the curve at which you would like your own profile to operate.



Signed_____

Date_____

S.77

Profile Analysis and Modification

Profile Number	Reason for Analysis/ Modification	Modification effective at Week Number:	Aim of Modification R - Improved Recall P - Improved Precision R/P - General Improvement	Time spent in Minutes	Questionnaire Assessment * Q1	Q2
001	-	-	-	-	-	
002	Poor performance - changed interest with job	022	P	120	P	G
004	Routine check	023	R/P	270	G	G
005	Low precision	017	P	45		
006	User comment on low precision	019	P	60		
007	-	-	-	-	G	G
008	Addition to profile comment on precision	016 017	Addition P	10 15	FG	VG
011	User comment on possibly missed article	023	R	15		
012	Widened interest	037	Wider profile	50	-	VG
013	-	-	-	-	VG	VG
014	User comment very poor - Recall. User comment "Service Abysmal"	022 032	Removal of error in profile P	15 135		
015	User dissatisfaction Poor precision	- 035	- P	60 60	F	VG
016	Low recall	018	R	75		
017	User comments	016	P	60		
018	Routine analysis	-	-	20	G	G
019	-	-	-	-	G	F

* Key to assessments: VP - very poor, P - poor, F - fair
F/G - fairly good, G - Good, VG - very good

021	Routine analysis Routine analysis	019 029	R R	85 15		
022	-	-	-	-	F	G
023	Routine analysis and user clarification of interests	021	Completely revised profile	225	F	VG
024	User comments on recall	-	-	20	F	-
025.	-	-	-	-		
026	Routine analysis	018	R	180	G	G
28	Routine analysis	012	R	45		
029	Routine analysis	017	R/P	190	G	VG
030	-	-	-	-	G	G
031	-	-	-	-	G	G
032	Routine changed interests	012 016	R/P revised profile	120 90	G	G
033	User comment	020	P	15	-	P
034	-	-	-	-	G	G
035	-	-	-	-	G	G
036	Routine	022	P	60	G	G
39	Routine	026	P	90	G	G
040	-	-	P	-	VG	VG
041	Added interests	016	Addition	60	F	G
042	-	-	-	60	G	VG
043	Routine	019	R/P	210	G	G
045	-	-	-	-		
046	Routine Low precision	016 022	R/P P	165 85		
047	Low recall routine	018 -	R -	165 20	F	G
048	Routine User comment -low precision	012 020	R P	90 15		

049	Low precision	040	P	60	
052	Routine	020	R	215	G
053	Routine	-	-	15	F G
054	Routine and added interests	025	R/P	90	
055	Routine	018	R/P	285	G VG
056	Routine and user comment	022	R/P	30	
057	Low recall user comment low precision	012 023	R P	120 90	
058	Low precision	025	P	150	F F
059	-	-	-	-	G G
060	-	-	-	-	G G
062	Routine	020	R	150	
065	User comment	039	R/P	185	G G
067	Routine Routine	012 024	R/P R	270 30	F G
069	Low precision	031	P	155	
070	Low precision User comment	019 043	P P	75 30	
072	User comment	020	P	10	G VG
073	-	-	-	-	VG VG
074	Routine Low precision	025 038	P P	25 110	
075	Revised interests	029	New profile	150	F G
078	Routine Routine	012 026	R/P R/P	45 165	F G
079	Routine	-	-	55	F F
082	Routine Routine	019 030	R/P R/P	120 150	
083	-	-	-	-	VG G

084	Routine and user comment	032	R/P	125	F	F/G
085	-	-	-	-	G	VG
086	-	-	-	-		
088	Routine	-	-	120		
	Routine	040	R/P	95		
089	Routine	030	R/P	30		
	Routine	043	P	100		
090	-	-	-	-		
092	Low precision	025	P	70	F	VG
095	-	-	-	-	G	G
096	Routine	-	-	40	F	F
097	-	-	-	-	G	VG
098	User comment	012	P	5	F	F
	User comment	020	R	2		
	User comment	039	R/P	85		
099	Routine	-	-	45	VG	G
100	User Comment	016	P	60	G	VG
	User comment	-	-	-		
101	Routine	015	R/P	150		VG
102	Revised interests	026	Revision and R/P	60		
103	Low precision	030	P	110		F/G
104	Routine and added interests	024	R/P	120	F	F
105	Low recall	023	R	35	G	G
106	Low recall	030	R	90	G	VP
107	-	-	-	-		
109	Routine	019	P	75	F	G
	Added interests and user comments	038	R/P	75		
110	Low precision	025	P	95	F	P
111	Routine	026	P	100	G	VG
112	User dissatisfaction	033	R/P	35		G

113	Routine	022	R	40		
114	Routine	015	R/P	180		
115	Routine	035	R/P	125	F	G
117	Routine	012	R	30	G	G
118	Routine	015	R	85	F	G
119	User comment Routine	019 024	P P	15 120		
121	Routine	035	P	90	F	F
122	Routine	018	R/P	120		
123	User comment Routine	019 041	R/P P	45 60		
125	User comment and routine Routine	019 035	R P	50 105		
126	Low recall Low recall	012 025	R R	145 105	F	G
127	User comment Low precision	016 030	P P	20 155		
129	Routine	038	P	270	G	F
130	User comment	020	P	40		
131	User comment Addition to interests	017 019	P Addition	140 30		
132	-	-	-	-		
133	-	-	-	-		
134	User comment Routine	026 035	R/P P	105 90	F	G
135	-	-	-	-	F/G	F
136	Low precision	039	P	110		G
137	-	-	-	-		G
138	Routine	018	R/P	75	G	G
139	-	-	-	-	VG	VG

141	-	-	-	-	G	G
142	Additional interests	023	R/P	90	F	VG
145	User comment	026	R/P	120	P	F
146	Low recall	035	R	120		
147	Routine	-	-	30	F	G
148	Low precision	022	P	330	VG	VG
149	Low precision	033	P	90	F	G
151	User comment	019	P	75		F
152	Routine	018	R	30	G	G
153	-	-	-	-		
156	Low precision Added interests	040 043	P Additions	100 20		
158	-	-	-	-		
159	-	-	-	-	G	G
160	Low precision Routine	026 037	P P	100 45		
161	Added interest	017	R/P	10		G
162	Routine	019	R	50		
163	-	-	-	-	G	G
164	Routine	018	R	155	G	F
165	-	-	-	-	G	G
166	- User comment	- 016	- P	- 15		
167	User comment Routine User comment User comment Routine	018 023 026 028 041	R R R R P	15 20 60 25 55	G	P
168	Routine	026	R	35	G	F
169	Routine	012	R	30	P	G
170	Routine	modification	did not take effect	60	F	F
	Routine Low precision	023 038	R/P P	80 55		

171	-	-	-	-	G	G
173	Routine	035	P	60	F	F
174	Routine	035	R	50	F	G
175	Routine	022	R	35	G	G
	User comment	026	R/P	95		
	User comment	028	P	30		
	User comment	040	P	20		
176	Routine	Modification not input		90		
177	-	-	-	-	F	G
178	Routine	035	R	25	F	F
	Routine	-	-	15		
179	Routine	016	R/P	195		
	User dissatisfaction	021	New profile	150		VG
	Routine	031	P	30		
180	User comment	015	R	10		
	Routine	017	P	45		
	User comment	019	P	25	F	G
	User comment	034	R	15		
181	Routine	019	P	140		
182	Low recall	035	R	60		
183	Routine	019	R	40		VG
185	Routine	019	R	45		
	Routine	037	P	330	F	G
186	-	-	-	-		
187	-	-	-	-		VG
190	Routine	012	P	115		
	User comment	017	P	55		
	Routine	-	-	40		
191	User dissatisfaction	019	P	165		
192	User comment	016	P	45		
	Routine	-	-	55	P	F
193	-	-	-	-		
194	User comment	020	P	30		
195	-	-	-	-		

197	Transfer of profile	038	New profile	150		F
198	-	-	-	-		
199	Routine	017	P	30		
	Routine	-	-	15	VG	VG
	Added interest	040	R	95		
200	Routine	023	R	160		
	Modified interests	026	-	20	F	F
201	-	-	-	-	F	F
202	Routine	-	-	25		
	Routine	-	-	40	P	F
	Routine	029	P	55		
203	-	-	-	-		
204	Added interests	017	Additions	70		
	Routine	022	P	95	VG	G
	Added interests	032	Additions	30		
205	Routine	019	P	210		
	User dissatisfaction	024	R/P	180		
	User dissatisfaction	-	-	65		
206	-	-	-	-	G	VG
207	-	-	-	-	G	F
208	Routine	015	R	30	G	F
209	-	-	-	-	G	G
10	-	-	-	-	G	G
212	Routine	022	R	50		
213	-	-	-	-		
214	User comment	022	P	120		
	Routine	039	R/I	120		
215	Routine	018	R	40		
	Low precision	033	P	120		
216	Routine	022	R	35		
217	Added interests	016	Additions	30		
	Added interests	020	Additions	15		
	Routine	023	R	30		
	Routine	032	I	145		
	User comment	038	P	80		
218	-	-	-	-		

219	-	-	-	-		
220	-	-	-	-	G	G/VG
222	Routine	019	F	155		
	Modified interests	019	Revised profile	30		
	User comment	-	-	25		
224	Routine	019	R	45		
225	-	-	-	-		
226	User comment	-	-	20	F	G
227	Routine	023	R/P	75	G	G
228	Routine	019	R/P	90		
	Low precision	037	P	130		
230	Routine	019	R	35		
	Routine	029	R	20	G	G
231	Reinstated profile	043	P	200		
232	Routine	-	-	100		
	Routine	026	P	80		
233	Added interest	016	Additions	15		
	Routine	032	P	265		
234	Added interest	024	Additions	35		
236	-	-	-	-		
237	Routine	-	-	10		
238	Routine	035	R	60		
239	Routine	015	R	120		
	User comment	037	R/P	90	F	F
240	Routine	039	R	45		
241	Routine	019	R/P	90		
	Routine	033	P	150		
242	Routine	-	-	25		
	User comment	022	P	25	G	F
	Routine	038	P	80		
243	Routine	023	R	75	G	G
244	Routine	033	P	85		
245	User comment	016	Additions	65		
	Routine	019	R	80	VG	VG

246	-	-	-	-	G	VG
247	Routine Low precision	017 040	R/P P	110 70		
248	Project associate's comments	016	R/P	15	F	F
249	Project associate's comments	019 032	P P	15 20		
251	Routine	022	R/P	240		
253	Routine Routine	019 023	R R	115 120		
254	Routine Low precision	- 031	- R/P	40 135		
256	Changed interests	016	New profile	30		G
257	Routine Routine Routine	- 024 -	- P -	20 85 25		
258	Routine	034	P	80		
259	Routine Routine	029 038	P P	85 80		
260	Routine	019	P	100	F	VG
261	Routine	012	R	90	G	G
262	Routine	023	P	210	F	F
263	User comment	023	R	180	F	F
264	User comment	-	-	30	VG	G
265	Routine	022	R	115	F/G	G
266	User comment Low precision	022 037	P P	45 45	F	G
267	Routine	023	R	65	G	F
268	-	-	-	-		
269	Routine	019	P	120	G	G
270	User comment Routine	- 026	- R	15 75		
271	Routine	019	R/P	85		G

272	Routine	022	R	35	F	F
273	-	-	-	-		
276	User comment	019	P	30		
277	User comment	046	P	75	G	VG
278	Changed interests	023	New profile	5		F
279	-	-	-	-	G	G
280	-	-	-	-	F	P
281	Routine Routine Routine	018 023 -	R/P P -	170 170 25		
282	Routine User comment	030 034	R I	5 45	G	G
284	-	-	-	-	G	VG
285	Routine	016	R	35	G	G
286	Routine	018	R/P	160	VP	P
287	Routine	017	P	25	VG	VG
288	Routine	038	P	195	G	G
289	Routine	025	R	95	P	G
290	Routine	035	R	60	P	G
291	Routine	019	R/P	105	P	G
292	Changed interests	012	New profile	340		
293	Added interests	017	Additions	5	G	G
294	User dissatisfaction	-	-	95	P	P
295	User comment	-	-	30	F	F
296	Routine Routine	019 046	R R/P	60 180	F	F
297	User comment	019	P	90	G	G
298	Routine	034	P	95	F	G

300	Routine	-	-	-	G	F
301	Routine	012	R	75		
302	Routine	-	-	-	VG	VG
303	Routine Routine	012 035	R P	45 65	F	G
304	User comment	017	R	65	G	G
305	Routine Routine	- 032	- P	25 90		
306	-	-	-	-	G	G
307	-	-	-	-		
308	-	-	-	-	G	G
309	Routine Routine	021 024	R/P P	220 80		P
310	-	-	-	-	G	G
312	User comment Routine	016 037	R P	30 65	F	VG
313	Routine User comment	- 024	- P	45 60	F	F
314	User comment	020	P	20		G
315	-	-	-	-		VG
316	Routine	039	P	50	G	G
317	Routine	019	R	60		
318	-	-	-	-	G	G
319	Routine	022	R	25	P	P
320	-	-	-	-	G	G
321	-	-	-	-	G	G
322	Routine	043	R/P	255	F	G
323	User comment Routine	019 025	P R	15 70		
324	Additional interests User comments User comments User comments	018 022 030 -	Additions P P -	80 105 60 30		

325	User comments	029	R	10	F/G	G
	User comments	038	R	30		
326	Changed interests	015	New profile	65	F	G
328	User comments	018	Additions	65	F	VG
329	Routine	-	-	20	F	G
	Routine	033	P	115		
330	User comments	016	R	55		
332	User comments	017	P	55	P	F
333	Routine	038	P	120	F	F
334	Routine	019	R	60		G
335	-	-	-	-		
336	-	-	-	-	G	G
337	Routine	019	R/P	80	F	G
	Routine	033	P	55		
338	User comment	018	R/P	90		
	User comment	024	P	25	P	VG
	Changed interests	038	New profile	75		
339	-	-	-	-	G	G
340	Routine	034	P	125	G	VG
341	User comments	032	P	30		
342	User comment	-	-	30	F	F
343	Routine	022	R	40	G	G
344	Added interests	019	Additions	45		
	User comments	038	R	90		
346	-	-	-	-		
347	-	-	-	-	P	P
348	Routine	012	P	120		
	User comments	023	P	100		
	User comments	026	R/P	45		
	User comment	-	-	15	G	F
	Changed interests	045	New profile	240		
349	Routine	024	R	70		G
350	Routine	031	R/P	115		

351	User comment	017	Addition	25		
	User comment	019	P	90		
	User comment	024	R	30		
352	User comment	025	P	140		
	Low precision	033	P	120	F	F
353	-	-	-	-	VG	G
354	User comment	017	Addition	15		
	Routine	032	R	20		
355	-	-	-	-		
356	Routine	-	-	95		
	Routine	037	P	105		
357	User comment	016	P	65		
	User comment	026	P	25	F	G
	User comment	041	P	15		
358	Routine	018	R/P	115		
	Routine	-	-	10	G	G
	New interests	025	New profile	140		
359	Routine	-	-	5		
360	Routine	-	-	20	F	G
361	Routine	012	R	85	F	G
362	New interests	023	New profile	30	G	G
363	Changed interests	017	Revised profile	15	F	G
364	User comment	-	-	40		
	User comment	-	-	10	VG	VG
365	-	-	-	-		
366	Routine	012	R	45		
	Routine	031	P	110		
367	Modified interests	032	Revised profile	55	G	F
368	New interests	017	New profile	60	F	F
369	Routine	019	R/P	105	F	G
370	Routine	-	-	20		
371	User comment	016	P	60		
	Routine	026	R	35		
372	User comment	032	P	40		
	Low precision	-	-	15	F	F

373	Routine	030	P	75		
375	User dissatisfaction	026	R/P	140		
	User dissatisfaction	046	P	75		
376	Low precision	034	P	60		
377	User comment	-	-	10		
	User comment	034	P	150	F	F
379	Routine	026	R	75	G	G
380	Routine	012	R	50		
	User dissatisfaction	024	P	60	F	F
381	Routine	-	-	10		
	Routine	037	R	60	F	VG
382	Routine	022	R	45		
	User dissatisfaction	033	P	45	G	F
383	Routine	012	R	75	F	F
384	Routine	033	R/P	120	F	F
385	User comment	020	R/P	165	F	G
386	Routine	019	P	90		
	User comment	032	P	20	P	F
388	-	-	-	-	G	G
389	-	-	-	-	G	G
391	-	-	-	-	G	G
392	Added interests	012	Additions	15		
	Routine	-	-	20	F	VG
393	Added interests	020	Additions	20		
	Routine	040	P	105		
394	User comment	019	P	15		
	Routine	023	R	45		
397	User comment	017	R	170		
	User comment	033	P	70	F	G
398	Routine	025	R/P	120	G	G
	Routine	034	P	140		
399	Changed interests	019	New profile	60		
	User comment	041	R	10		VG
400	Routine	031	P	75	F	VG

401	User comment	016	P	40	G	G
	Routine	022	R	40		
402	Changed interests	025	Revised profile	65	G	VG
	Routine	034	P	40		
403	User dissatisfaction	019	P	170	F	VG
404	User comment	-	-	60	F	F
405	Routine	019	P	120		
	User comment	033	P	50		
407	Routine	018	R/P	150		
	Routine	023	R/P	220		
	Routine	-	-	120		
408	Routine	026	R/P	140		
409	User comment	-	-	25	F	G
410	Routine	023	R	85		
	Routine	-	-	30	G	G
	Routine	045	P	130		
411	Routine	019	R	210		
	Routine	023	R	85	G	VG
	Low precision	031	P	7		
412	-	-	-	-		
413	-	-	-	-		
414	Routine	016	R	35		
	Routine	023	R/P	180		
	Routine	-	-	100		
415	Routine	018	R/P	180		
416	Low precision	038	P	60	G	G
417	Routine	019	R/P	175		
	Low precision	037	P	75	F	G
	User dissatisfaction	043	P	60		
418	-	-	-	-	G	VG
419	Routine	012	R	105		
	Routine	026	R	75	G	G
	User comment	032	P	25		

420	User comment	016	R/P	60		
	Routine	-	-	15	G	G
	User comment	026	R	20		
422	-	-	-	-		
424	User dissatisfaction	026	R/P	120	F	G
425	Routine	012	R	185	G	G
426	User comment	020	R	120		
	Routine	-	-	65		
	User comment	025	R	15	F	G
	User comment	040	P	20		
427	Routine	020	R	70		
	Routine	-	-	65		
430	Routine	037	P	95	F	G
432	-	-	-	-		
433	-	-	-	-		
434	Routine	037	P	65	F	F
435	-	-	-	-	VG	VG
436	Routine	018	R	35		
	Routine	022	R	35	G	VG
437	Routine	012	R	70		
	User comment	032	P	75	P	P
	Low precision	039	P	45		
438	Routine	015	R	20		
	Routine	023	P	140		
	Changed interests	038	Revised profile	60		
440	Routine	023	R	60	G	G
442	Routine	-	-	45	F	G
443	Routine	026	R	90	G	G
444	Routine	012	P	85		
	Changed interests	038	Revised profile	85		
445	Routine	037	P	105	F	G
446	Routine	026	R/P	120		
447	Routine	020	P	150		
	Low precision	025	Error in logic statement	75		

448	Routine	038	P	130		
450	-	-	-	-		
452	User dissatisfaction	041	P	180	F	G
453	-	-	-	-		
454	Routine Changed interests	018 038	R New profile	20 190		
455	-	-	-	-	F	G
456	Routine Routine Routine	012 022 -	P R -	80 35 10	F	F
458	User comment	-	-	40		
459	-	-	-	-		
460	User comment Low precision	029 039	P I	105 120	P	F
461	Routine	018	R/P	35	P	G
462	Low precision	038	P	40	G	F
464	Added interests User comment Routine	020 025 031	R/P P P	100 115 90	G	G
466	Routine Routine	- -	- -	35 15		
467	Routine User dissatisfaction User dissatisfaction	012 023 037	R/P R/P P	150 360 150		
468	Routine User comment	- 017	- R/P	5 20	VP	VP
469	User comment	025	P	195	F	G
470	-	-	-	-	G	G
471	Routine	019	R	40	G	F
473	Routine	031	R/P	110	F	G
475	Routine	019	R/P	145		
476	Routine New interests	019 030	R New profile	75 75		
477	User dissatisfaction User dissatisfaction	019 -	R/P -	60 30		

478	-	-	-	-		
479	Routine	037	P	60		
480	Routine	-	-	10	F	G
	Routine	-	-	35		
481	Added interests	040	New profile	210	VG	G
	Routine	-	-	55		
482	User comment	-	-	15	F	G
485	Routine	018	P	65	G	G
486	User dissatisfaction	-	-	20	G	G
	Routine	022	R	45		
488	Routine	018	R	75	F	VG
	User comment	-	-	25		
490	-	-	-	-	G	G
491	-	-	-	-		G
493	-	-	-	-		
499	Routine	012	R/P	65		
	Routine	-	-	45	G	G
	Routine	038	R	35		
500	Added interests	019	Additions	15	G	G
501	Routine	019	R	75	G	G
	Routine	051	R	35		
502	Routine	019	R	70	G	F
503	Routine	019	R/P	180		
	Added interests	031	Additions	10		
504	Routine	-	-	5		
	User comment	026	P	75		
505	Routine	015	R	60	G	G
	Routine	023	R	90		
506	Routine	019	R	70		
508	-	-	-	-	G	G
509	-	-	-	-	G	G
510	-	-	-	-	G	VG
511	Added interests	031	Additions	20		
512	Routine	020	R	120		

513	Error in profile Low precision	023 039	Error correction P	30 60		
514	-	-	-	-	G	G
515	-	-	-	-		
516	User dissatisfaction	020	P	120		
517	User comment	040	R/P	190	F	VG
518	User comment Added interest	020 041	P Additions	10 75	G	G
520	Routine and user comments Added interests User comment User comment	019 022 035 043	R Additions P P	55 20 135 15	G	F
521	-	-	-	-	G	VG
522	Routine	018	P	55		
523	User comment	023	P	55	F	F
524	User comment User comment	019 031	P Reduced interests	20 15		
525	-	-	-	-	G	G
526	-	-	-	-		
527	-	-	-	-	G	F
528	Low precision	039	P	30	G	VG
529	-	-	-	-		
530	Low precision	031	P	90	G	G
531	-	-	-	-	G	G
532	User comment	023	P	5	F	F
533	Routine	037	R/P	75		
534	-	-	-	-		F
535	User comment	023	P	120	F	F
536	-	-	-	-	G	G
537	User comment User comment	- 038	- P	10 135		F

538	Changed interests Routine	015 -	Revised profile -	80 15	F	F
539	Added interest Low precision	017 040	Additions P	30 90		
540	Routine	019	R/P	180	G	G
543	-	-	-	-		
544	-	-	-	-	G	G
546	Routine	020	R/P	170		
547	Routine User dissatisfaction	012 019	R R/P	80 105	VP	F
549	-	-	-	-	G	G
551	Routine	015	R	30	G	G
552	Routine Routine	018 -	R -	60 20	F	F
553	Routine	030	P	75		
554	-	-	-	-		
555	Routine Added interests	019 024	R Additions	85 25		
556	-	-	-	-		
557	Routine	018	R/P	245	VG	VG
558	-	-	-	-	G	F
559	Routine	020	R	110	G	F
560	Routine	012	R	90		
562	User comment Routine	023 026	Error correction P	30 150	P	G
564	Redefined interests User comment User comment	019 025 037	Revised profile P P	40 90 30	P	P
565	Routine User comment User dissatisfaction	012 017 024	P P P	120 10 120	VP	F
566	-	-	-	-	G	G
567	Added interests	020	Additions	20	F	G

569	Routine Routine	- 043	- P	80 90	F	G
570	Routine Routine	015 -	R -	70 45	F	G
571	-	-	-	-	G	G
572	User dissatisfaction User dissatisfaction	018 024	P P	60 210		
573	User comment	017	P	30		
575	Added interest	024	Additions and P	95	G	G
576	-	-	-	-		
577	User dissatisfaction User comment Routine	016 024 -	R/P P -	40 160 45	P	F
578	Routine	037	R/P	80	F	G
579	Routine	019	R	10		
580	User comment	039	R/P	135	F	G
581	User comment	037	R/F	85		
582	Low precision	022	P	90		